

CHAPTER 4

Packing Procedures and Operations

WEATHERPROOFING THE PACK

GENERAL

Throughout the text, we have stated that we must protect our military supplies and equipment from the effects of water, either in its liquid or vapor form.

We can protect the contents of our packs through the use of certain barrier materials in various applications.

When these materials are properly applied to the pack, it is called Weatherproofing the Pack. Examples of weatherproofing are shown in figure 4-1.

KINDS OF PROTECTION

There are three different kinds of protection that can be applied to packs when they are weatherproofed. It can be waterproof, watervaporproof, or watershed, depending upon the extent of protection required.

Waterproof

This term indicates that the barrier will prevent the direct entry of water but does not prevent the penetration of watervapors through the barrier. If the barrier is completely sealed, it will provide waterproof protection. Examples are case liners and interior wraps.

Watervaporproof

This term indicates the material is resistant to passage of watervapor, though not necessarily a complete barrier. If the barrier is completely sealed, it will provide watervaporproof protection. Examples are case liners and interior wraps.

Watershed

When the waterproof material is placed over or around the items and left unsealed, it provides watershed protection. Watershed applications permit free circulation of air around the item. Examples are crate liners, interior shrouds, and temporary tarpaulins.

CASE LINERS

Case liners are used for liners of boxes to protect contents against the entrance of water or watervapor depending upon the barrier material used. Caseliners are furnished as prefabricated or "tailor made" bags. As shown in figures 4-2 and 4-3, case liners can be constructed as a double-top pad or high top liner.

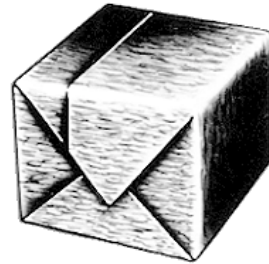
The joints, seams, and closures must be sealed to afford water-resistance equal to that of the barrier material itself. This may be accomplished by heat sealing, adhesive, or tapes. Case liners form a continuous barrier which is a separate part of the box.

SEALED WATER-VAPORPROOF OR WATERPROOF APPLICATIONS

CASE LINERS

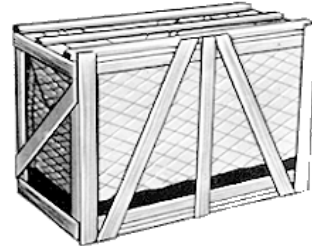


INTERIOR WRAPS

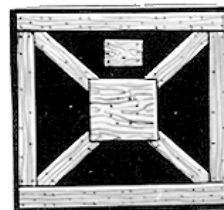


WATERSHED APPLICATIONS

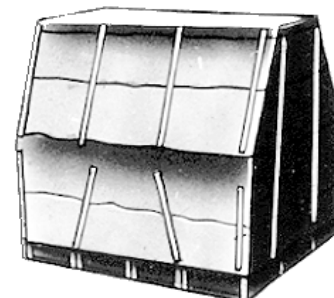
INTERIOR SHROUDS



CRATE LINERS

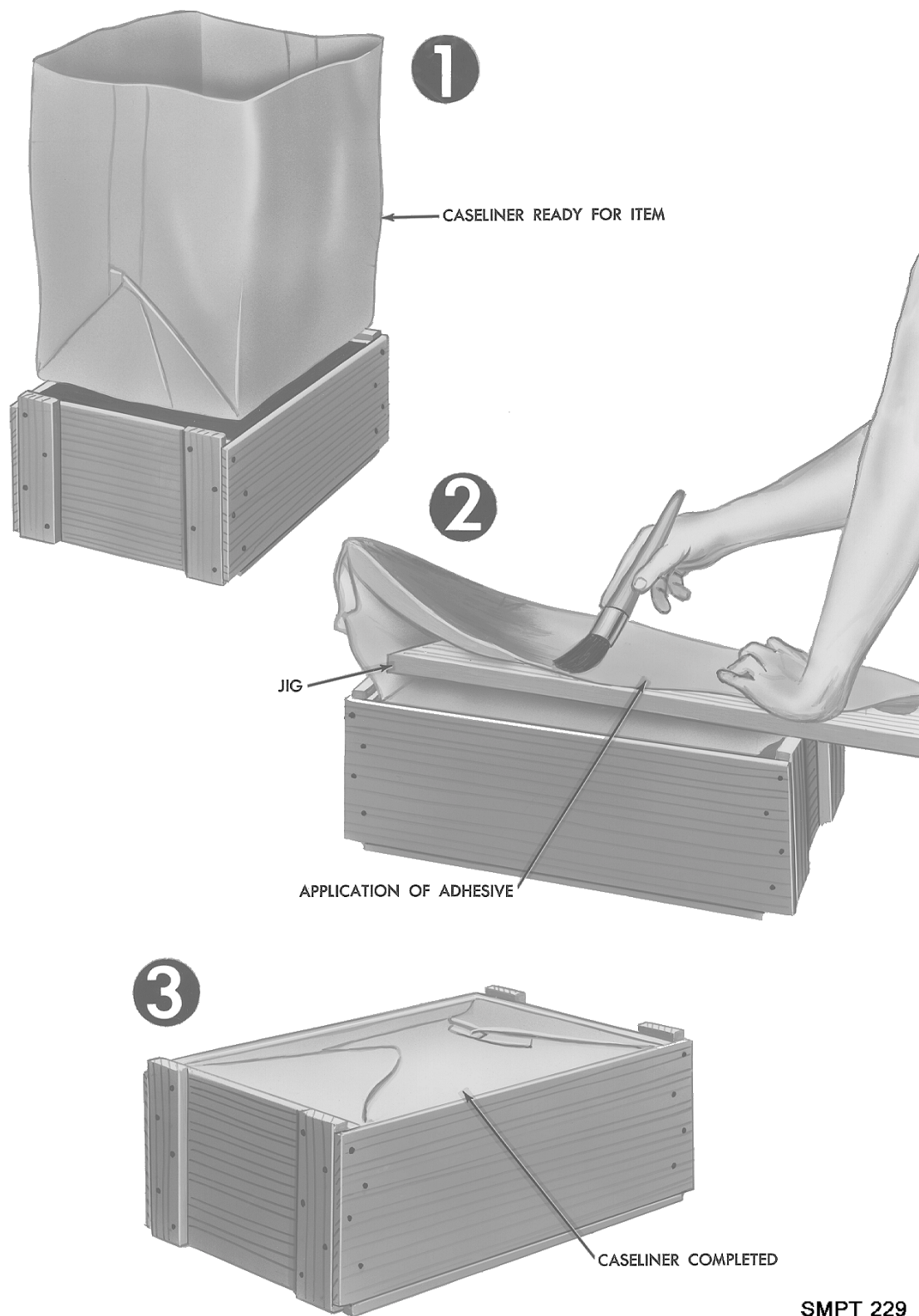


**TEMPORARY
TARPAULINS**



SMPT 2587A

Figure 4-1. Examples of weatherproofing the pack.



SMPT 229

Figure 4-2. High top caseliner.

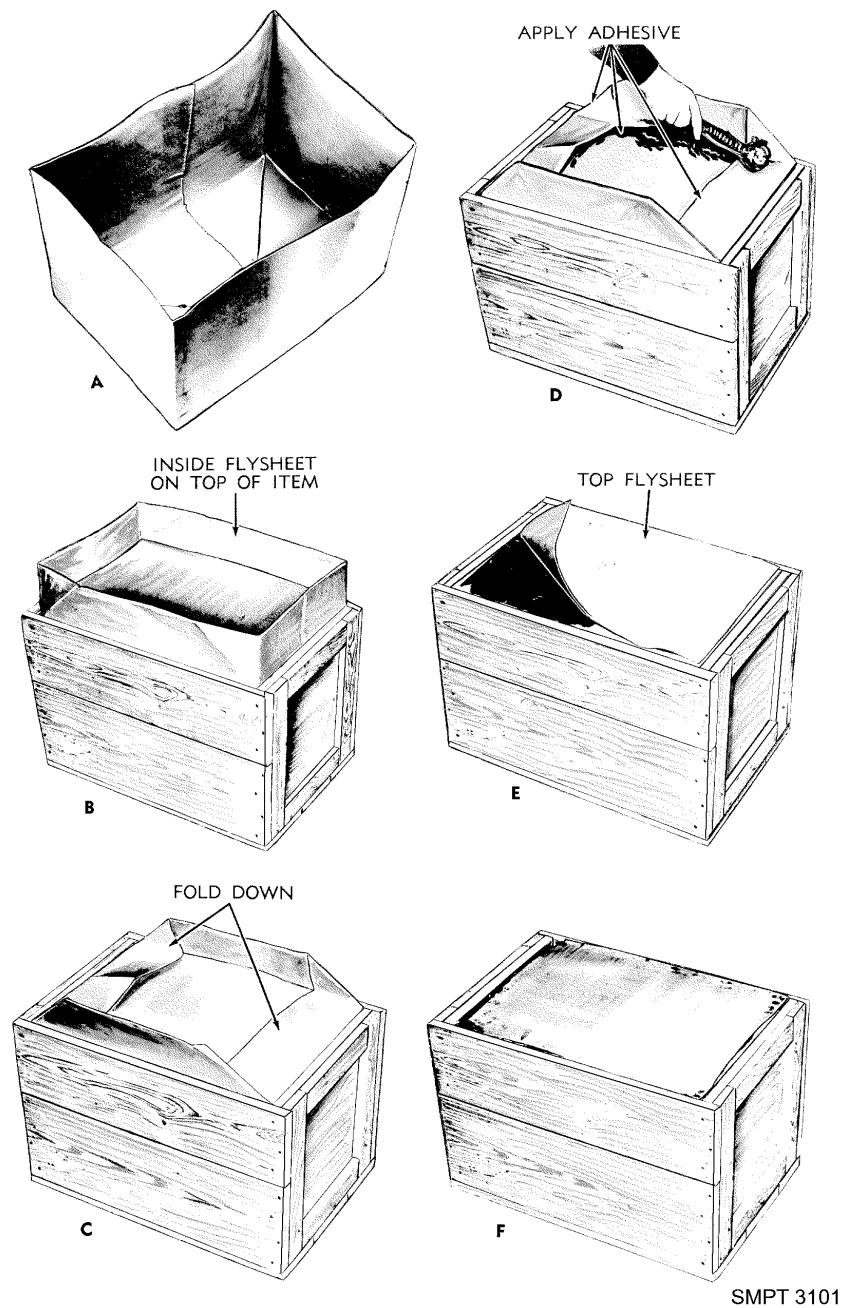


Figure 4-3. Double top pad caseliner.

Barrier material may be kraft paper or plastic film and affords protection equal to that of the wrap or bag.

Experience has shown that under some conditions, especially when the contents do not completely fill the case liner, case liners do more harm than good by trapping and holding water rather than preventing its entry.

It is not necessary that there be openings in a sealed case liner for this to happen.

If the case liner has a low resistance to watervapor, water can enter in the form of vapor and condense on the contents within the liner.

It has been found that case liners opened after extended outdoor exposure were partly filled with liquid water.

When packed items need protection against water, it is preferred the protection be provided by individually wrapped unit packs instead of case liners.

INTERIOR WRAPS

Interior wraps, as illustrated in figure 4-4, are used to protect individual packs or light parts, or sections of items, against penetration of water or watervapor, depending upon the barrier material used.

All seams, joints, and closures are heat sealed or sealed with other suitable materials to afford protection equal to that of the wrap or bag.

Barrier materials may be kraft paper or transparent plastics, giving either waterproof or watervaporproof protection.

CRATE LINER

Crate liners are used to line the side and end panels of crates, as in figure 4-5.

The material is placed between the lumber sheathing of the crate and the inner framing members.

The material is applied to the separate panels and does not form a continuous barrier.

Crate liners provide watershed protection.

INTERIOR SHROUD

Interior shrouds are generally used to cover material packed in open crates to protect the item against direct entry of water.

The shrouds should hang free, when possible, without the use of binding ties (such as strings, strapping, etc.) and should extend to approximately 6 inches from the base of the crate to provide ventilation, as shown in figure 4-6.

Seams should be sealed with water-resistant adhesive.

All sharp points of contact between the item and the shroud should be cushioned to prevent rupture or chafing of the shroud.

The shroud should be placed over the item in such a way as to prevent the formation of water pockets.

In this application the shroud provides watershed protection and is so constructed that it does not interfere with free circulation of air around the item.

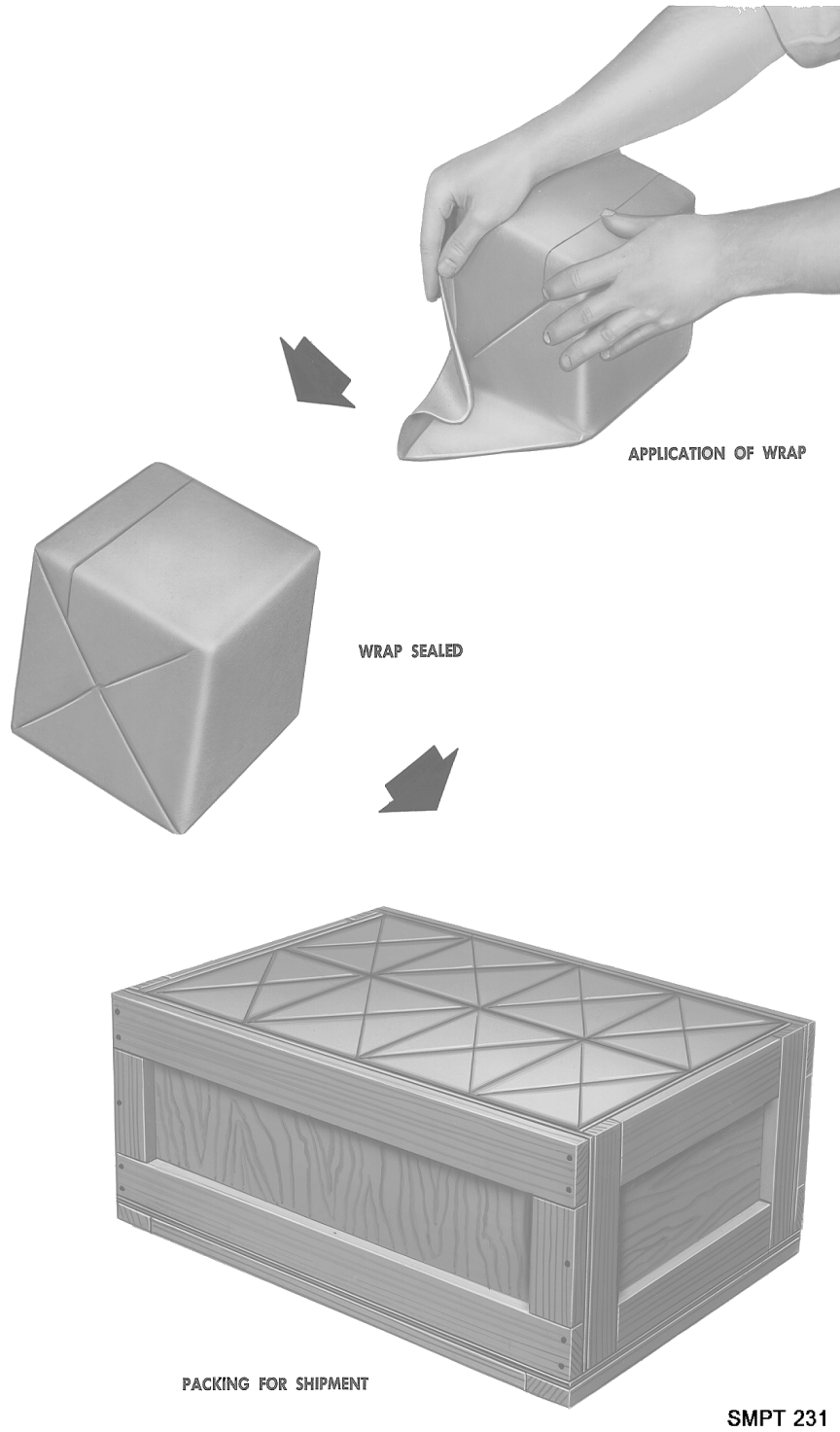


Figure 4-4. Interior wraps.

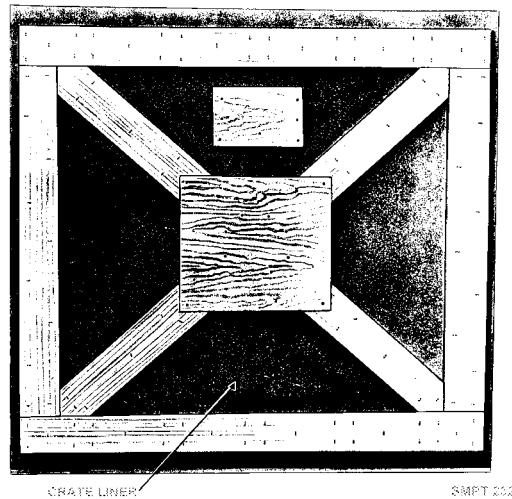


Figure 4-5. Crate liner.

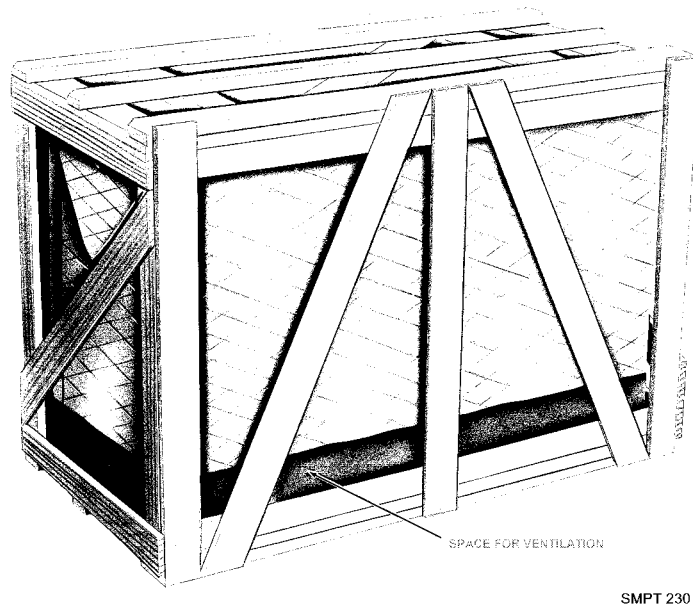


Figure 4-6. Interior shroud.

TEMPORARY TARPAULINS

Temporary tarpaulins are applied as coverings of material in outdoor storage. They provide watershed protection against the penetration of rain.

The temporary tarpaulin should cover the top, sides, and ends of the material to be protected.

Temporary tarpaulins are generally secured by tying or weighting down in place.

Figure 4-7 shows the preferred attachment of temporary tarpaulins through use of a wooden framework over the container or to the container with wooden holddown strips. They should be placed in such a manner to permit free circulation of air around the material and to avoid wind damage to the tarpaulin.

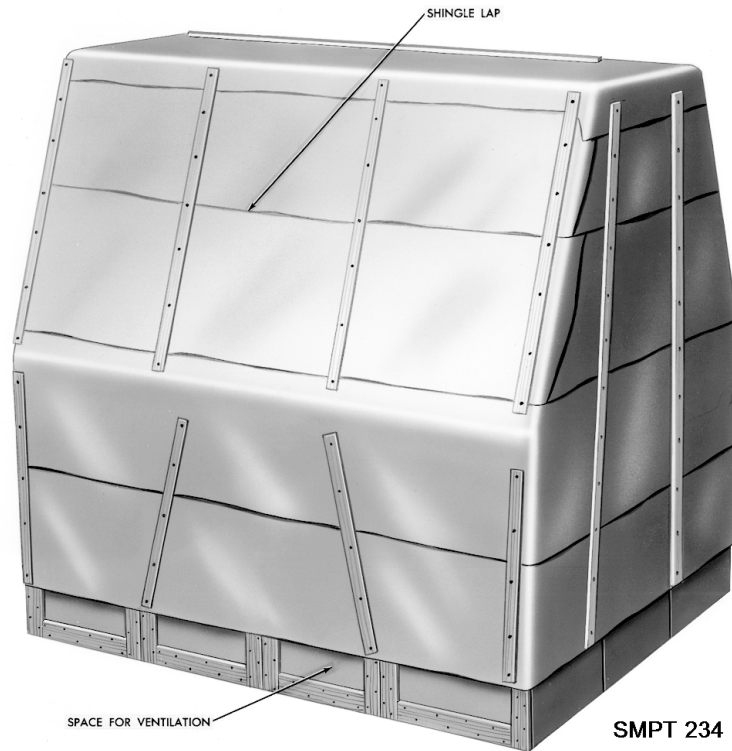


Figure 4-7. Temporary tarpaulin.

SUMMARY

In summary, there are five different ways to weatherproof the pack depending upon the extent of protection required. They are caseliner, crateliner, interior wrap, interior shroud, and temporary tarpaulin.

Checkup

- X What are the three different kinds of protection you can give to your packs when weatherproofing the pack?
- X What type of protection does a case liner provide?
- X What kind of protection is provided by a crate liner?
- X What type of protection does an interior shroud provide?
- X How far should an interior shroud extend from the base of the crate?
- X What are temporary tarpaulins used for?

WEATHERPROOFING THE PACK PRACTICAL EXERCISE

Objective

As a result of this practical exercise, the student will be able to identify the various methods of weatherproofing the pack.

General Instructions

This exercise will be conducted in the classroom.

It will require approximately 1 class period.

The instructor will conduct a critique at the end of the exercise.

Conduct of Exercise

Situation

As a packer you are responsible for making interior shrouds and case liners in weatherproofing the pack.

Requirement No. 1. Answer the following questions.

- X What is the most damaging factor to items exposed to the weather?
- X Name the five methods of weatherproofing the pack.
- X What type of weather protection do you get when you use a crate liner?
- X How many types of caseliners are there and what are they?
- X What kind of weather protection does a case liner give a pack?
- X What determines the kind of protection we get from a case liner?
- X Identify the method of weatherproofing in figure 4-8.
- X Identify the method of weatherproofing in figure 4-9.
- X Why must the bottom of the material in the above method be six inches above the base of the crate?
- X List and define (in your own words) the 3 different kinds of protection which may be provided by weatherproofing a pack.

Critique

Instructor will orally critique questions.

Care of Area, Training Aids & Equipment

Not applicable.

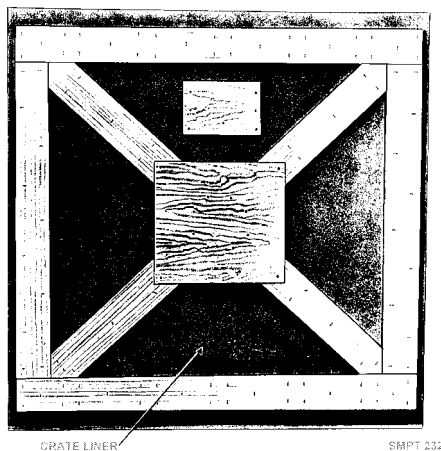


Figure 4-8. Weatherproofing #1.

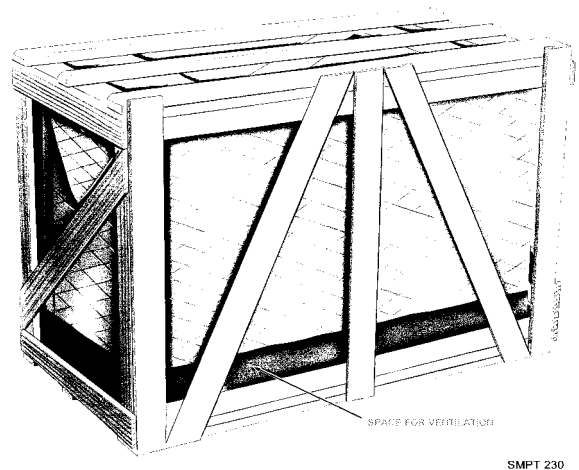


Figure 4-9. Weatherproofing #2.

CARGO UNITIZATION

METHODS OF UNITIZATION

Unitization

Involves methods and means by which items of supply are shipped from origin to destination as a single unit. Definitions that follow describe elements of the unitization process.

Unitized Load

The assembly into a single load of more than one package of one or more different line items of supply in such a manner that the load can be moved in an unbroken state from source to distribution point or user.

Palletization

Palletization is unitization by means of a unit load using a pallet for a base. A quantity of any item or items, packed or unpacked, is arranged on a pallet and securely strapped or fastened to it so that it can be handled as a single unit as shown in figure 4-10. It may also be stretch wrapped or shrink wrapped.

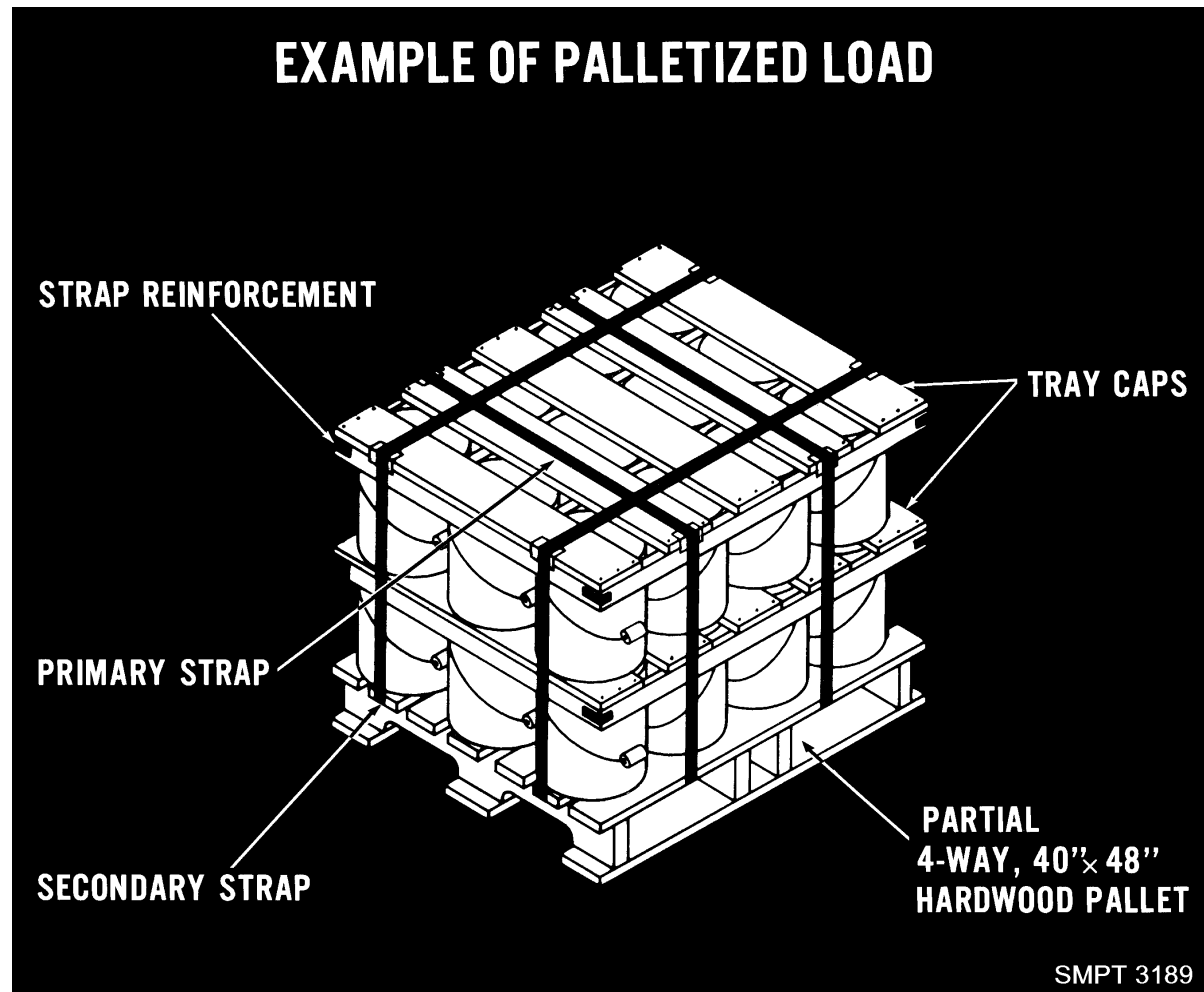


Figure 4-10. Examples of palletized load of pails.

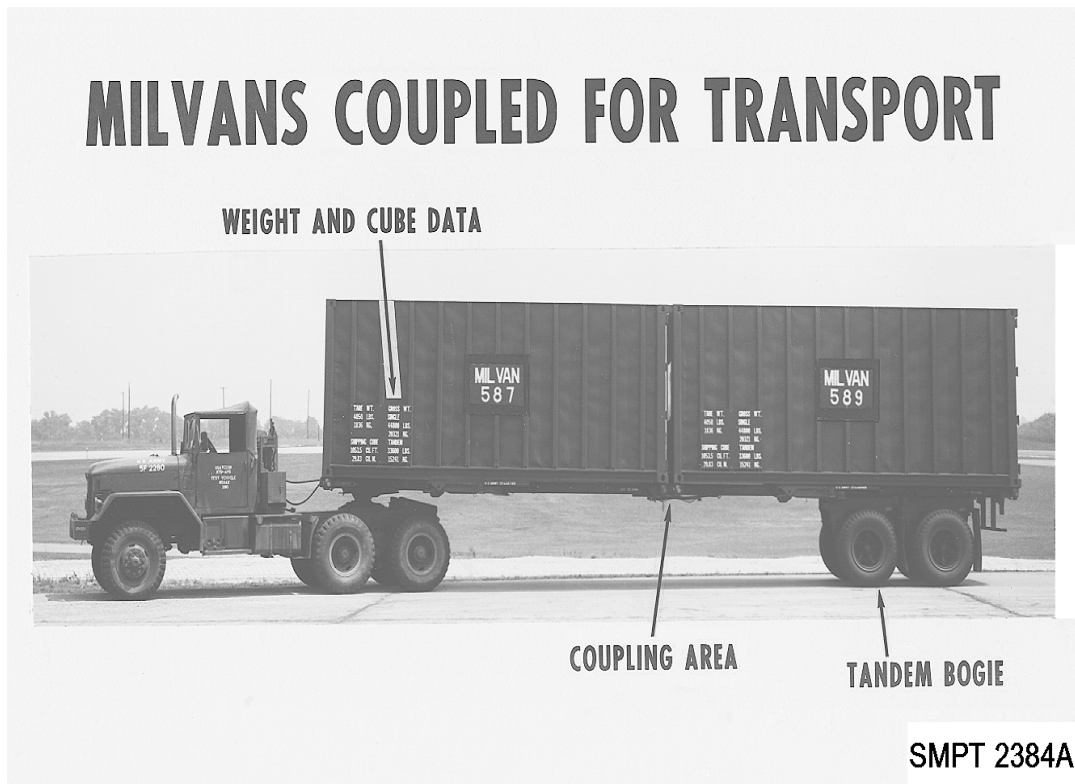


Figure 4-11. Milvans coupled for transport.

MILVAN

A military-owned van used for containerization, as shown in figure 4-11.

SEAVAN

A commercial or Government-owned (or leased) shipping container as shown in figure 4-12 is used for containerization which is moved via ocean transportation with bogey wheels detached. It is similar in design to MILVAN.

Consolidation boxes

Shown in figure 4-13 are boxes used as inserts in MILVANS or SEAVANS or as separate exterior shipping containers.

Containerization

In this lesson, the term is intended to refer both to the placing of commodities in plywood, wirebound and fiberboard containers, as well as to the loading of containers in SEAVANS and MILVANS in such a manner as to assure their protection during shipping, handling, and storage



Figure 4-12. Seavan moving over the road.



Figure 4-13. Wood cleated plywood consolidation boxes.

Advantages of Unitization

Economy

Unit loads provide an economical manner of handling, storing, and transporting small items or packs by eliminating a lot of manual handling of individual items.

Greater Speed in Handling

With unit loads, more tonnage can be moved in less time than is possible with other handling methods.

Utilization of Cubic Space

Material in unit loads can be stacked to greater heights in the warehouse with limited use of manpower, thus utilizing the greatest percent of available cubic storage space in the building.

Decreased Damage to Material

When compared to single item shipments, material handled in unit loads receives less damage and is more likely to reach its final destination in a serviceable condition.

Safety

Handling of material in unit loads is safer for personnel. Many of the accidents most common to storage operations occur where manual or individual pack handling is involved.

Pilferage

Unitization discourages attempts at pilfering the contents of a load or in the loss of individual items or packages.

Protects Against Environmental Hazards

Unitizing cargo helps protect supplies and equipment against severe environmental conditions.

Flexibility

Unitization leads to efficient and flexible supply support.

Unitization Methods

Earlier in this lesson we said there were five different ways we can accomplish the unitization of cargo. Let's discuss each one individually. They are palletization, consolidation, boxes, MILVAN and SEAVAN.

Palletization

Pallets play a key role in the unitization of cargo. Many types of items and small boxes may be secured to a wooden or metal platform either for independent shipping or as inserts in large shipping media such as van containers or closed rail cars.

There are three different kinds of pallets as shown in figures 4-14 and 4-15 in use today. They are known as four-way (partial) stringer, four way entry (post) pallet, and four-way partial stringer (softwood) pallet. All three of the above listed pallets may be used for long-term storage in both covered and uncovered areas.

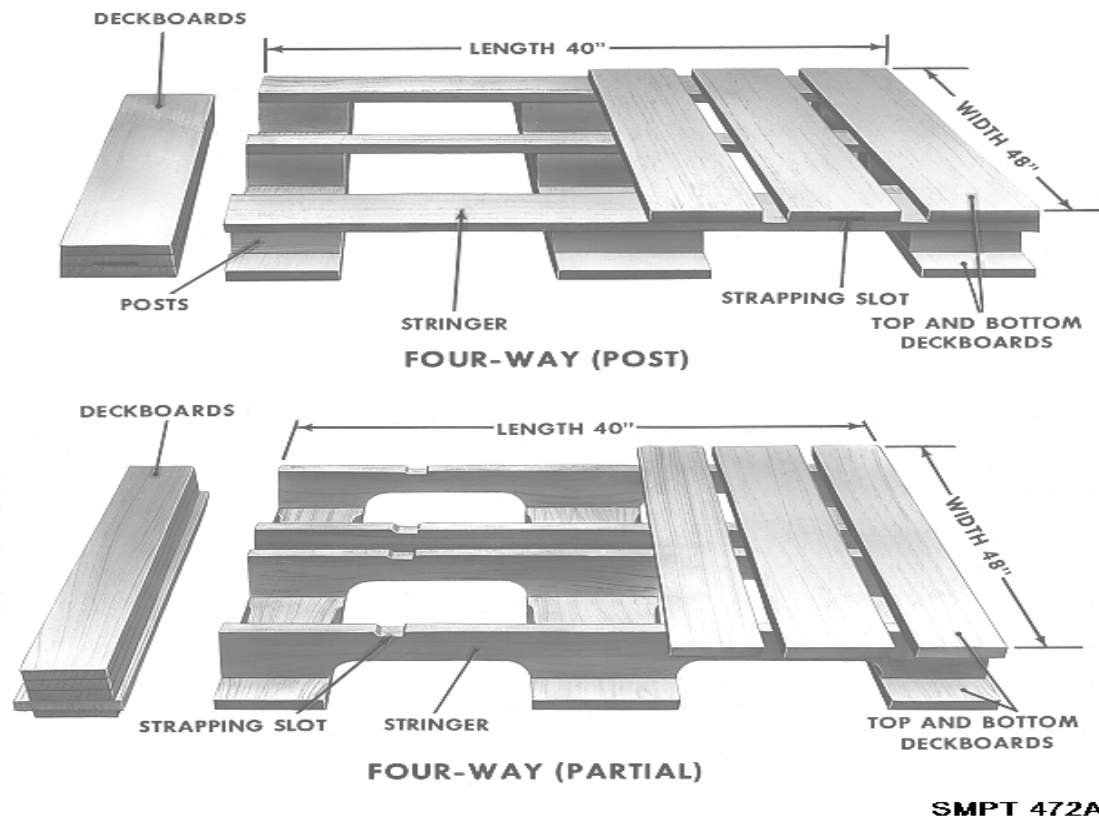


Figure 4-14. Pallets.

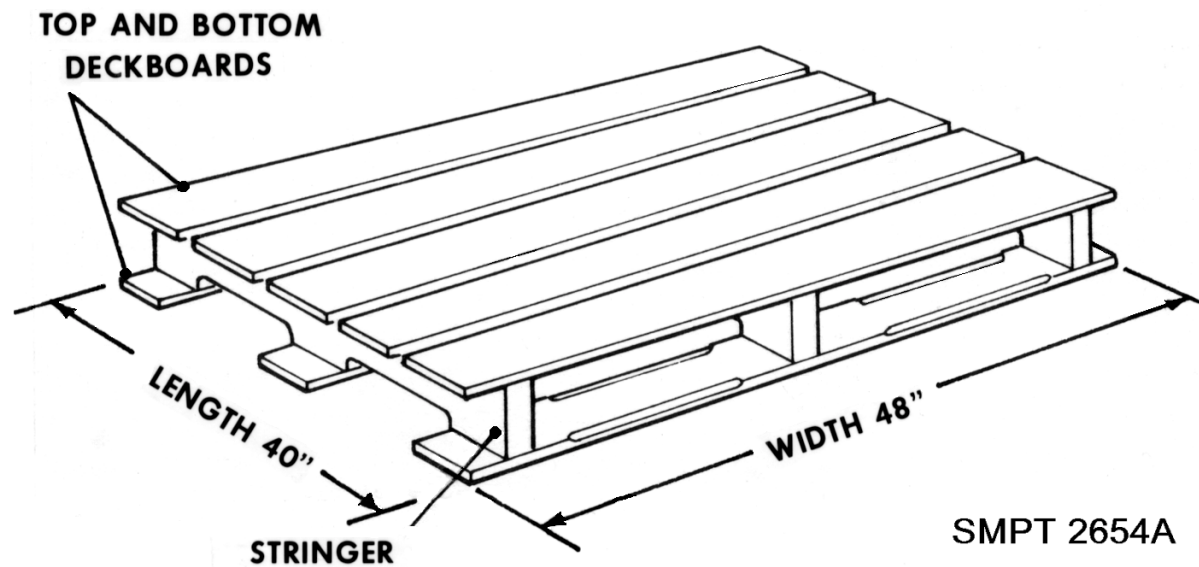


Figure 4-15. Softwood pallet.

Size Limits of Pallets

There are many different size pallets in use today. The one we are concerned with is known as the standard size pallet. It measures 40" x 48". The 40-inch dimension identifies the length of the pallet. The 48-inch dimension identifies the width of the pallet.

Load Limits of Pallets

When loading pallets, there are certain limits to which they can be loaded as shown in figure 4-16. A load cannot exceed 52 inches (widest dimension) which permits an over-hang of 2 inches at each end of the 48-inch dimension. Load units prepared for shipment in SEAVAN and MILVAN should not exceed 48 inches in width. A load cannot exceed 43 inches (narrow dimension) which permits an over-hang of 1-1/2 inches at each end of the 40-inch dimension. Loads for shipment in SEAVAN and MILVAN will not exceed 40 inches in length. A load should not exceed 54 inches in height, except for loads of compressed gases in cylinders. Loads prepared for shipment in SEAVANS should not be higher than 43 inches. Loads prepared for shipment in MILVANS should not be higher than 41 inches. Load limits are established in MIL-HDBK 774.

Weight Limits of Palletized Loads

When loading pallets, we must remain within the weight limitations for palletized loads. Weight limits apply to the entire load including pallet, bonding, storage aids, and units. The maximum weight of a load for domestic, intercoastal, or overseas shipment will not exceed 3000 pounds per single pallet load.

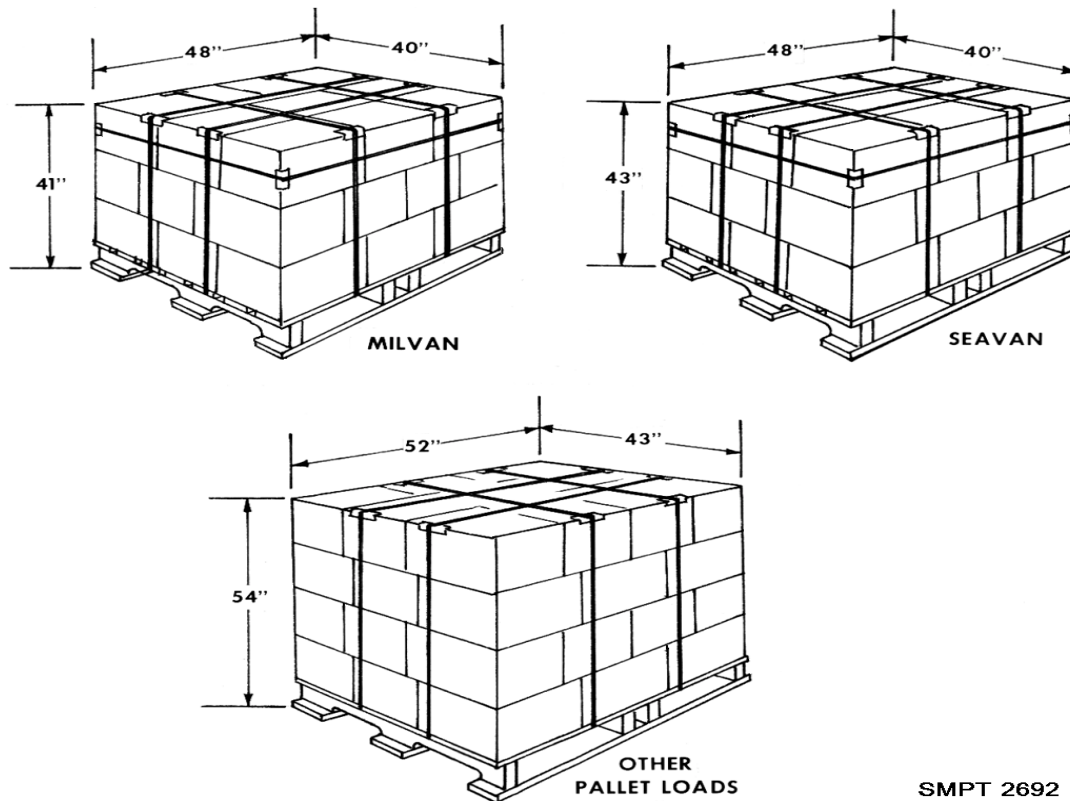


Figure 4-16. Other pallet loads.

Items To Be Palletized

Types of supplies that can be palletized are: items which are identical and identified by the same stock number; items uneconomical or impractical to pack otherwise; rugged and durable items that require minimum physical protection; boxed items uniform in size requiring additional protection; and items that are moved in large quantities. (See figure 4-16.)

Loading of Pallets

The arrangement of items on pallets must provide a rigid, compact, uniform size load. The items must be strongly secured to prevent shifting, and must be capable of resisting impact, vibration, wracking, and compression encountered during handling, storage, and shipment. To properly load a pallet, consideration must be given to the type of item, its weight, and destination.

Pattern For Palletization Loads

Containers or items are arranged on the pallet in a particular pattern for each type of item. When possible, the pallet pattern should be arranged to utilize all the pallet area with the least amount of margin on the pallet. When the pattern and the loading method have been determined for palletizing items into a secure load, that pattern and method should be used in preparing similar items into a load. The length, width, and height of each rectangular package must be considered in determining the pallet pattern to permit the formation of interlocking patterns and provide stability to the unit load. MIL-HDB-774 contains 124 different kinds of pallet patterns. We will only cover a few at this time to familiarize you with the pallet patterns. Determine length and width of the container to the nearest 1/2 inch. Locate the length of the container at the top and the width of the container on the left side of the index chart, as shown in figure 4-17; the container pattern will be found at the intersection of the two columns.

Using the pattern number which is given, locate this number on the pallet pattern illustration to find the number of containers that can be arranged on each pallet as shown in figure 4-18.

Load Classification

There are 18 different load classifications for palletized loads listed in MIL-HDBK-774. The ones most generally used are Load Type I and Ia which consist of fiberboard boxes, wood boxes, or other suitable hard surface units stacked in single or multiple layer loads as shown in figure 4-19.

Load Type III consists of closed head nesting type cylindrical or rectangular cans, pails or buckets that are stacked in multiple layer loads using an inverted wood cap under the load and a wood cap over the load as shown in figure 4-20.

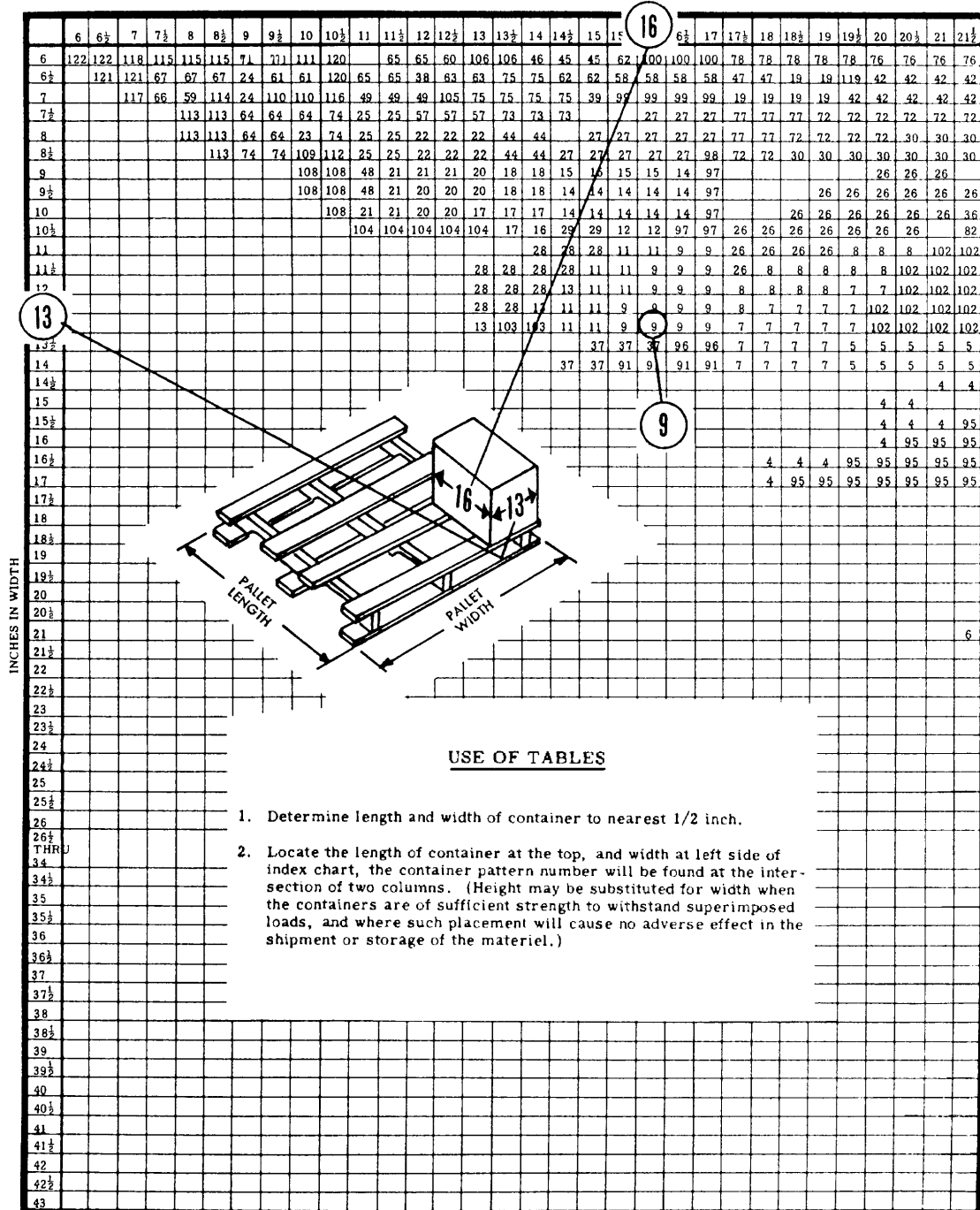
TABLE III , LOAD PATTERN DETERMINATION**SMPT 2210C**

Figure 4-17. Index chart for pallet patterns.

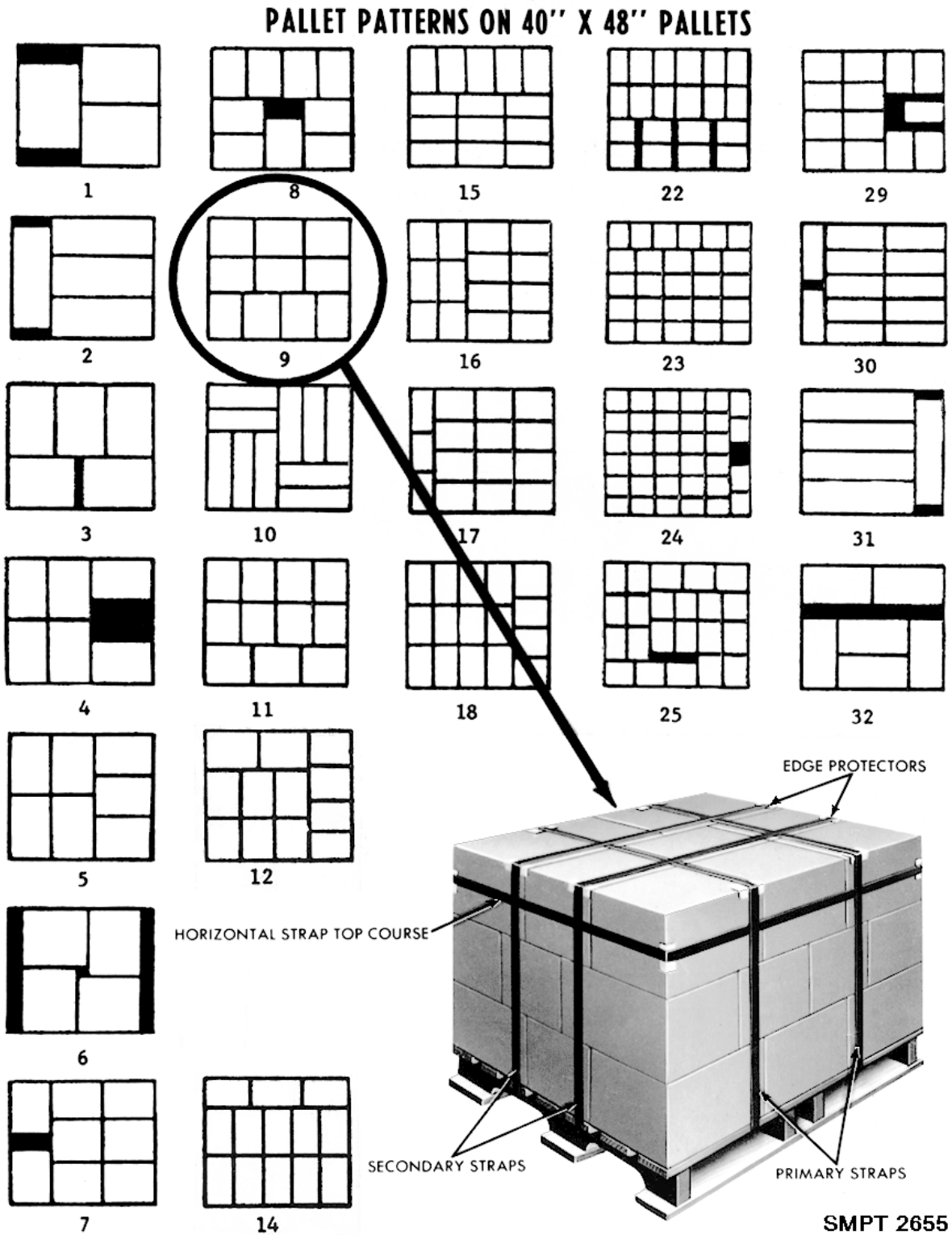
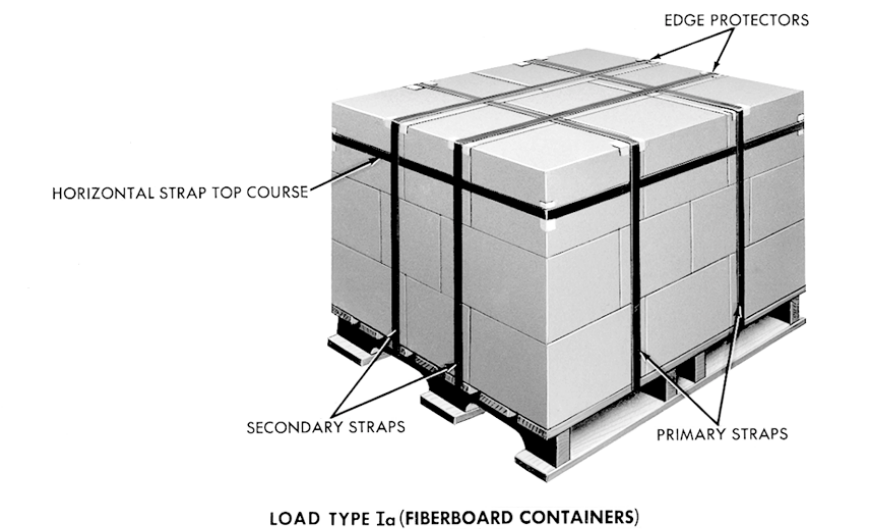
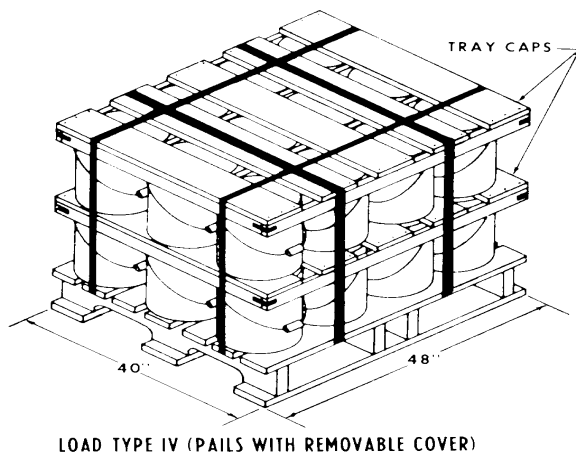
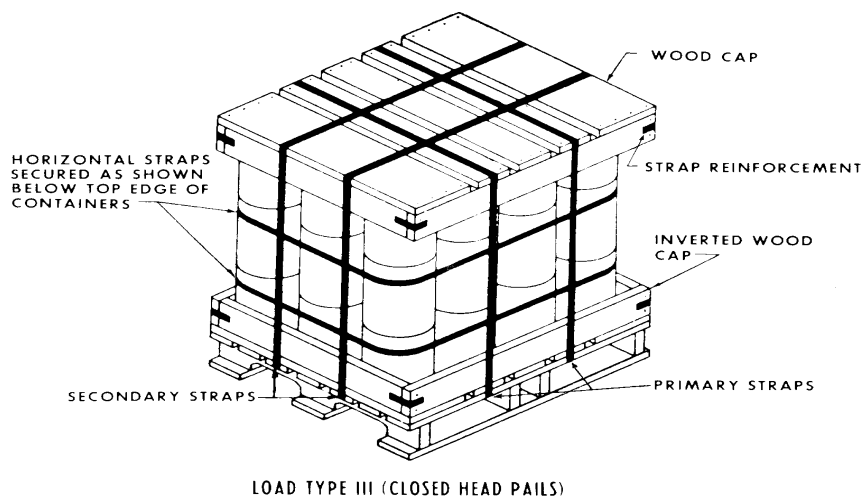


Figure 4-18. Finding correct pallet pattern.



SMPT 552

Figure 4-19. Load Type Ia.



SMPT 2211

Figure 4-20. Load Types III and IV.

Load Type IV consists of cylindrical and rectangular cans with removable covers containing plastics, paints, and semi-liquids (grease and lard), and nontop nesting closed head cans that must be stacked in multiple layers with wood tray caps between layers as shown in figure 4-20. Load Type XIII consists of cylindrical shaped items such as wire, cloth, canvas, wrapping paper, building paper, and sheet metal in rolls that must be stacked vertically in single or multiple layers with a wood cap over and under the load and with a double tray cap between layers as shown in figure 4-21.

Bonding Methods per MIL-HDBK-774

The following methods are used to secure units on, and to, a pallet such as over-the-load straps:

- X Over-the-load straps are placed over the load and are used to secure items vertically into a unit load. When possible, the straps should be centered over rows of items being bonded. When over-the-load straps are used on a load where horizontal straps are also required, the horizontal straps will be applied and secured prior to the over-the-load straps.
- X Tie-down straps consist of two over-the-load straps, which are used for loads intended for domestic shipments (except glued loads). The straps will be positioned over the load and under the deck boards inside the outboard pallet stringers in the 40-inch direction.
- X Tie-down straps, secondary. The secondary tie-down straps are also over-the-load straps. The two straps are used for domestic shipments (except for glued loads and gas cylinders). The straps will be positioned over the load and under the pallet deck boards in the 48-inch direction, through the strapping slots in the stringers.
- X Horizontal straps, when required, will be secured girthwise around a layer of items or a framed load. In certain instances, the horizontal strap will be secured around an unframed, but battened, capped, or collared load. Also, the horizontal strap will be used to provide supplementary bonding to wooden collars or to the double tray cap. When used on a load having over-the-load straps, the horizontal strap must be applied and secured before such other straps are applied.
- X Any over-the-load strap, either tie-down or load, which is not a primary or secondary strap, is identified as an auxiliary strap.

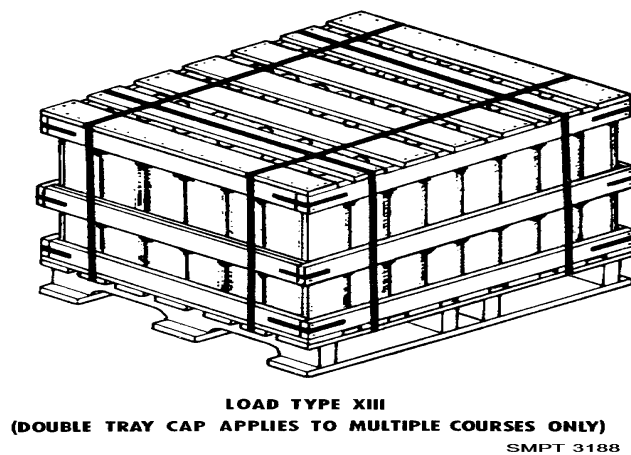


Figure 4-21. Load Type XIII.

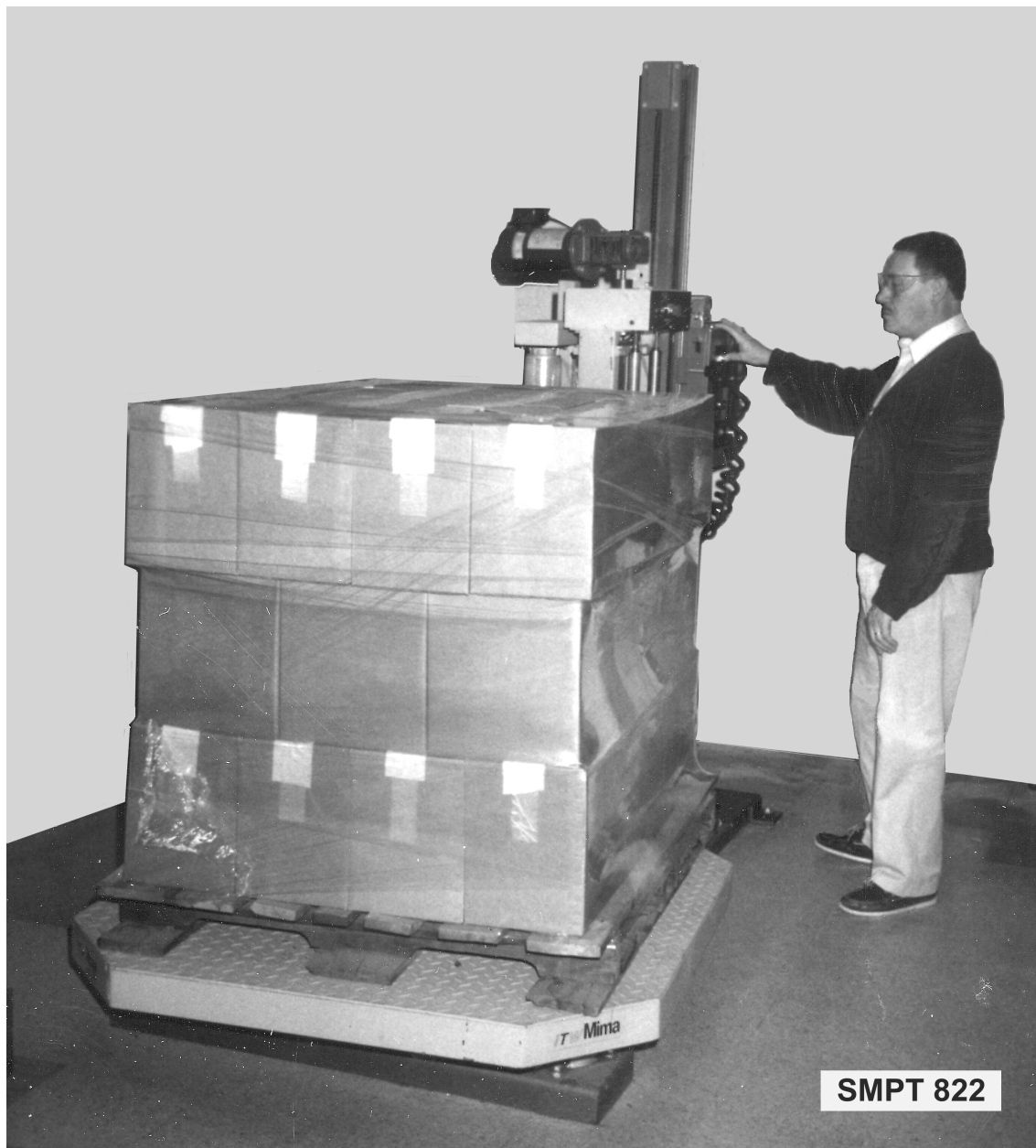
Storage Aids

Storage aids must always be used when bonding alone is insufficient. They are constructed of paper, canvas, fiberboard, wood or steel, and may be in the form of caps, collars, battens, and frames.

- X The caps and the items covered must be centered on the pallet to achieve an equal degree of margin or overhand on the pallet and to provide squared loads.
- X The fiberboard cap will be used on nonframed loads containing lightweight rectangular stable units. The plain (nonpartitioned) wood cap must be used, when required, on nonframed loads containing heavy rectangular items or on nonframed loads requiring caps.
- X The double tray cap will be used between layers in multiple layer nonframed loads containing stable units. This cap will be used only in loads which are capped over and under with plain caps.
- X The special tray cap is recommended in loads (usually two layer loads) containing filled 5-gallon paint-type pails. One cap is used over the top load and one over the lower layer of the load. A cap will not be required over the bottom of the load when the special tray cap is used.
- X The purpose of the wood collar is to secure the upper portion of loads of cylinders of compressed gases or loads of similar items. It provides a guard to protect the caps or tops of such units and to provide a substantial base for superimposed loads. Also, the loads should be secured with horizontally strapped wooden battens at the lower portion and with over-the-load straps. The collar must be made to fit each specific type of load snugly over the top; to enclose snugly the caps or valves of the cylinder and extend slightly above the tops of the caps or valves on the cylinders; and to rest on the outside perimeter of the units. The collar is partitioned at strategic places to enclose intermediate rows of cylinders and must be fitted exactly.

Wood battens will be used in conjunction with horizontal strapping to secure the lower portion of loads of cylinders of compressed gases (or loads of similar units), loads of bags which cannot be glued, or loads of rectangular metal units in multiple layers. Also, loads of cylinders of gas should be secured with a wooden collar over the top of load and with over-the-load straps. Battens are secured flatwise against the four sides of the load or on top of certain loads with horizontal or over-the-load straps, which are secured with doubly crimped seals and strapped. The battens are leveled on one side at each end and must be cut to exact size.

Frames may consist of a wood framework which may be sheathed or open. Frames should be constructed of the lightest weight material that will support three or more superimposed loads. Crosspieces and sheathing, added for additional strength or containment of small items, should be kept to a minimum.



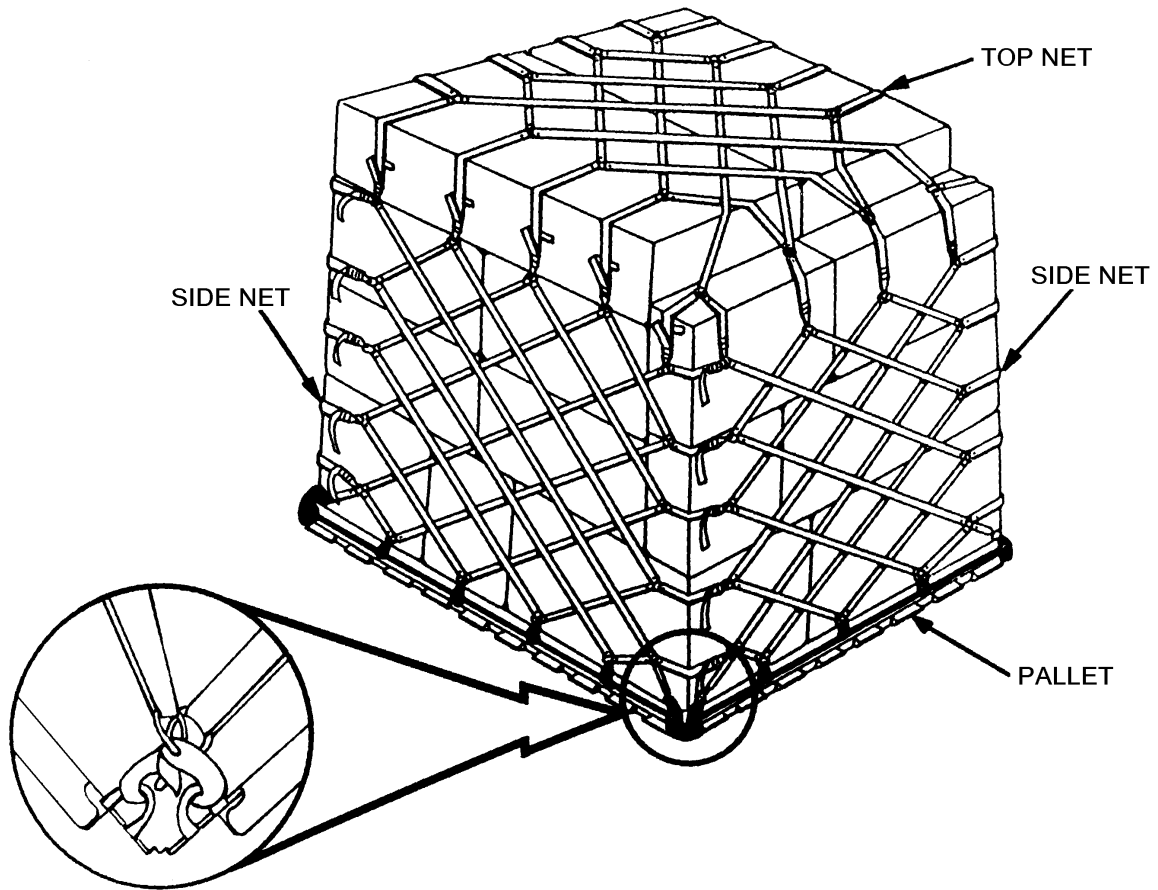
SMPT 822

Figure 4-22. Examples of stretch wrap palletizing.

Stretch wrap can be used as a means of bonding palletized loads for many commodities. The film is wrapped around the load in multiple layers from the top of the bottom deckboard to not less than two inches above the height of the load. The required thickness of the wrap is determined by the kind of film being used and the weight of the load. Additional strength can be provided by placing a sheet of weather-resistant fiberboard on top of the load prior to stretch wrapping.

Air Force 463-L Pallets

The Air Force uses a series of aluminum pallets in the 463-L air cargo materials handling system. See figure 4-23. The pallets are used with the 25,000- and 40,000-pound aircraft cargo loaders and palletized cargo trailers.



SMPT 543A

Figure 4-23. 463-L pallet.

Consolidation Boxes (MIL-B-43666)

A major advance on the road to more efficient unitization has been the development of a family of "sized" consolidation containers. There are 22 different sizes of containers in three basic types which are designed to make maximum use of shipping space in MILVAN and SEAVAN containers. The containers are also adapted to independent shipments.

Wood Cleated Boxes

Consolidation boxes can be wood cleated plywood boxes with block-type or notched runner skid bases depending upon their style. Wirebound plywood boxes with block-type or notched runner skid base depending upon their style. Fiberboard boxes are furnished with pallet base unless otherwise specified.

Sizes and Weight Limitations

Twenty-two sizes of boxes are available with weight limits ranging from 1,000 to 2,600 pounds.

Types of Loads

These boxes may carry Type 1, 2, or 3 loads.

Intended Uses

These boxes are designed to improve packing and unitizing of overseas shipments; compensate for shortage of terminal handling facilities, equipment, and personnel; protect against material pilferage, physical loss, and damage in transit; compensate for lack of covered storage and other severe environmental factors; and consolidate shipments of like and unlike stock numbered commodities.

MILVAN

The MILVAN, as shown in figure 4-24, is a military demountable cargo container that has been developed by the Army for containerized shipments. It is an important and widely used method of shipping unitized loads in vans worldwide.

The MILVAN is 20 feet long, 8 feet wide, and 8 feet high and is similar to commercial container vans. One or two vans can be coupled to a semi-trailer for towing. The vans are capable of being stacked six high.

As the case with commercial vans, the MILVAN is intermodal, that is, the van may be changed from one mode of transportation to another without its contents having to be unloaded or reloaded.

The MILVAN (ISO) is intended for transporting high density military cargo, when security and pilferage are of paramount consideration.

Construction features of the van include the following:

- X It is equipped with corner fittings for lifting and coupling.
- X The interior of the van is lined with plywood, which may be easily replaced if damage occurs during loading or unloading.
- X The van may be fabricated of steel, aluminum, plywood, or plastic or a combination of these materials.
- X It is sufficiently wide to allow forklift trucks to enter the van, and it has double doors at the rear.

The tare weight of the van is 4,400 pounds. Gross weight rating for each 20 foot container is 44,800 pounds, and the gross weight when two vans are coupled together is 33,600 for each container. Shipping cubic space is 1,053 cubic feet.

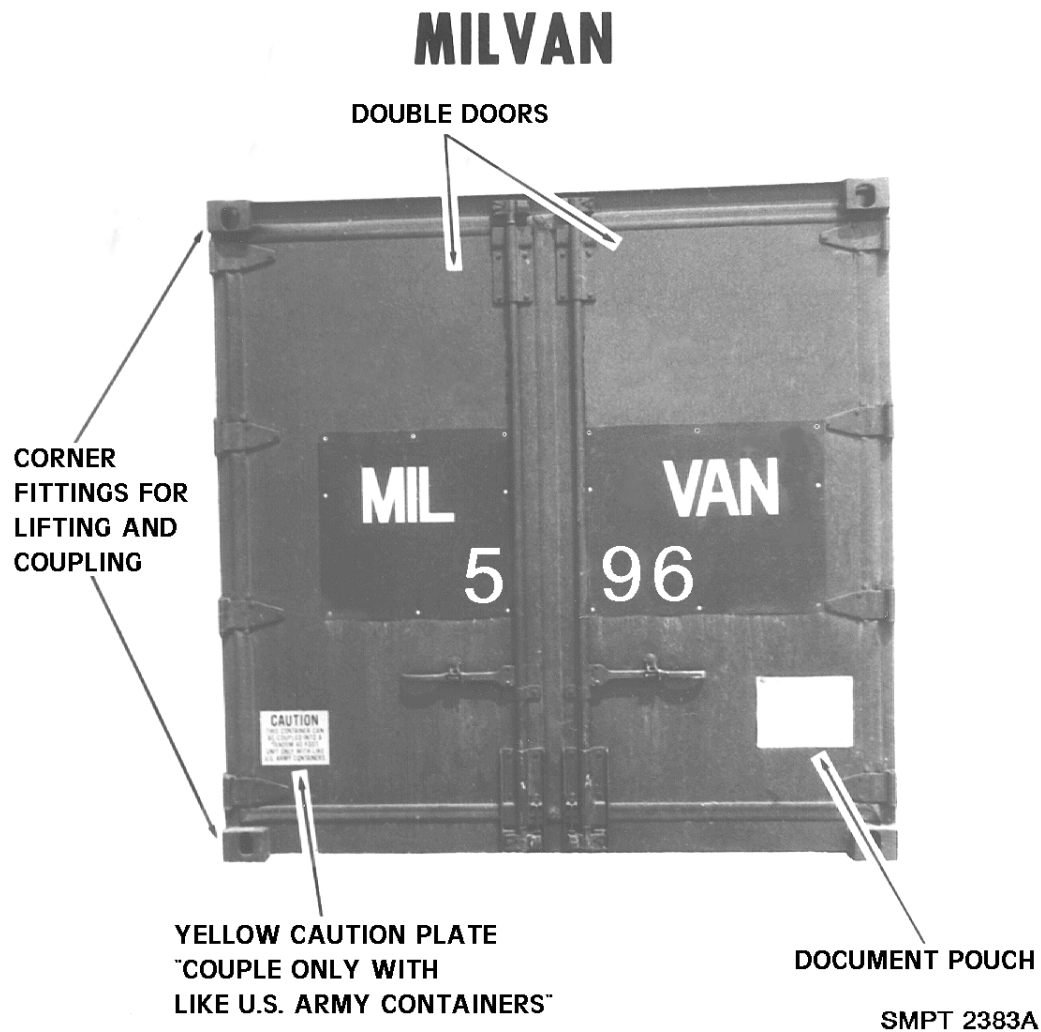


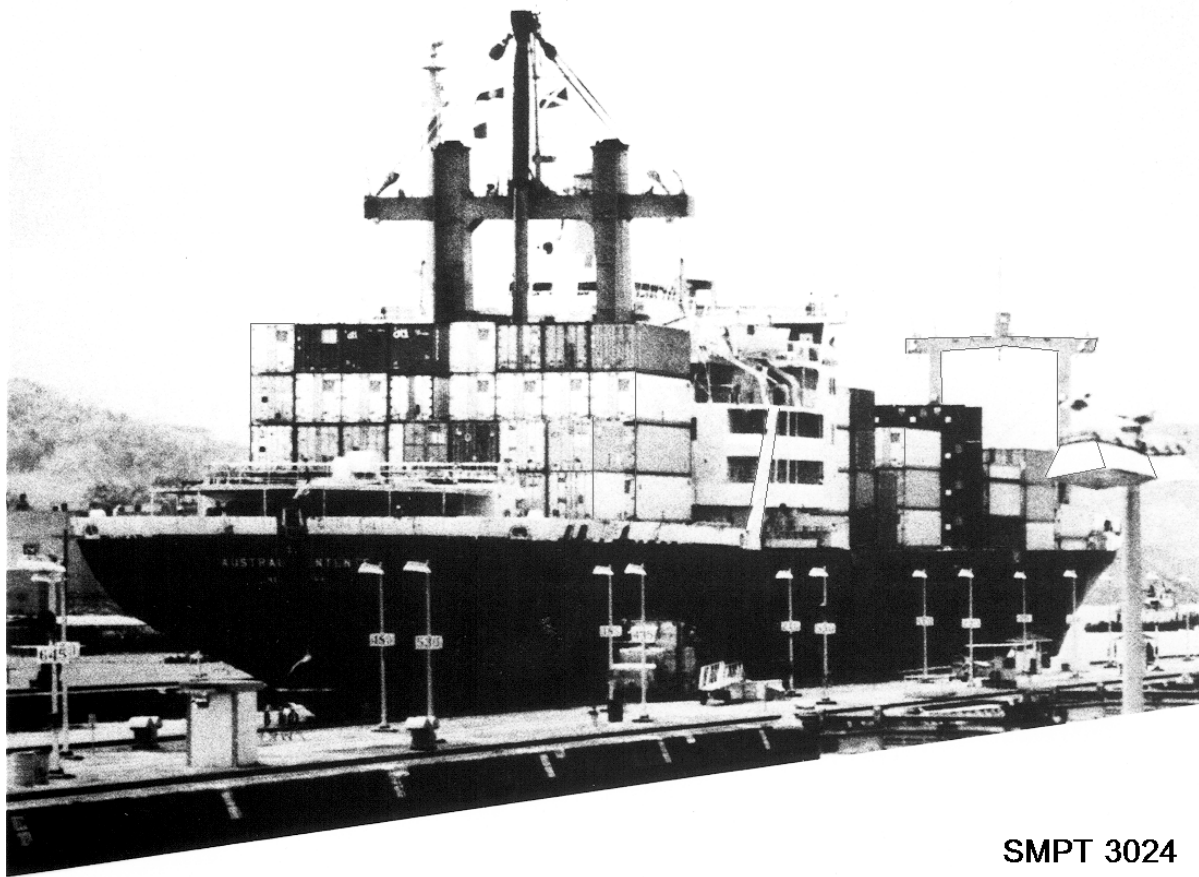
Figure 4-24. Rearview of MILVAN.

SEAVAN

The SEAVAN is a large demountable and intermodal container and is in wide service to many foreign ports. These vans are available in many lengths ranging from 20 to 40 feet. Generally, they are standardized to 8-foot widths and 8-foot heights. These vans are fabricated of different materials including steel, aluminum, wood, fiberglass, and combinations of these materials. The vans are compatible for movement by motor, rail car, and can be stored, for shipment, on specially containerized ships. SEAVANS can be loaded at the source in the United States and be delivered to the user in Europe in a little over one week. Modern materials handling equipment and large cranes at dock sites are used in the movement of SEAVANS as shown in figure 4-25.

Containerization as a method of unitization

A variety of containers from small consolidation containers to large demountable vans is contributing effectively to the unitization movement in the world-wide distribution of supplies.



SMPT 3024

Figure 4-25. Container ship.

Checkup

- X What is a unitized load?
- X What is containerization?
- X What are key advantages of cargo unitization loads?
- X When two MILVANS are transported together, what is the permissible gross weight for each van?
- X How many pallet patterns are cited in MIL-HDBK-774?

CARGO UNITIZATION PRACTICAL EXERCISE

Objective

As a result of this practice, the student will be able to palletize unit loads and pack consolidation containers.

General Instructions

This exercise will be conducted in the classroom.

It will take approximately one class period.

A critique will be held at the end of the exercise.

Conduct of Exercise

Situation

As a packer, you are required to consolidate, unitize, and containerize loads for shipment. You are required to determine and apply the correct loading and packing procedures and the application of special cap trays, blocking and bracing, and strapping so that the loads will be properly prepared for shipment.

Requirement

Answer the following questions.

- X What is cargo unitization?
- X Name three ways of unitization.
- X What is a base on which items are consolidated for shipment called?
- X What is the size of a standard pallet?
- X What two methods are used to hold items on a pallet?
- X You are going to ship a load of items packed in boxes 19 x 8-1/2 x 2 inches, each weighing 40 lbs.
 - B What pallet pattern would you use?
 - B What are the length and width limitations for the pallet load if it is going into storage?
 - B What is the overall height limit if it is to be shipped in a MILVAN?
 - B If the pallet is 6" high how many boxes can be loaded on each pallet if it is being loaded in a MILVAN?
- X In addition to the pallet pattern what other information can you obtain by reading MIL-HDBK-774?
- X In which direction do the secondary straps run?
- X What is the most weight you can put in a MIL-B-43666 consolidation box?
- X What name is given to a cargo container, which, after it is packed, can be carried by any mode of transportation without repacking?
- X What is the military intermodal container called?
- X What is the maximum gross weight of a single MILVAN?
- X If two MILVANS are coupled together, what would be their maximum gross weight?
- X What is the size of a single MILVAN?
- X What is the height of a standard pallet load?
- X What is the maximum weight that can be shipped on a single pallet?
- X What items may be palletized using load classification type XIII?
- X What is the purpose of a wooden collar?
- X What are the primary advantages of cargo unitization?
- X What are the advantages of shrink film palletization over conventional unitization?

Critique

Instructor will ask the students to answer each questions orally.

Care of Area, Training Aids & Equipment

Not applicable.

MARKING AND LABELING

MARKING REQUIREMENTS

Purpose

Marking is the application of numbers, letters, labels, tags, symbols, or colors to provide identification and expedite handling during shipment and storage.

No matter how well an item is made or packed, it has no value if it cannot be identified at its destination.

General Marking Requirements

All shipments should be marked and labeled in a manner suitable for the mode of shipment to be used.

Unauthorized markings on shipping containers should be obliterated (blanked out, covered with paint, stencil ink, etc.).

Each palletized unit and unpacked unit should bear the address of the intended receiving activity.

Labels should be used in preference to tags, except when it is impracticable to apply a label.

MIL-STD-129, MIL-HDBK-129, and MILSTAMP provide the requirements for the uniform marking of military supplies and equipment for shipment and storage.

Markings, Marking Materials and Methods

Marking Materials

Marking materials used shall be those materials specified in MIL-STD-129 or alternate choices approved by the cognizant activity. Contractors may obtain the DOD-unique labels discussed herein from commercial sources after obtaining samples from either the procuring activity or the local Defense Contract Management Command (DCMC) office.

Waterproofing Materials Used as Protective Coatings

Waterproofing materials such as spar varnish, acrylic coating compound, sealing compound, label adhesive, polyurethane coatings, and pressure-sensitive tape, that does not restrict or preclude legibility or readability of the package markings, shall be used as protective coatings on container markings.

Stencil-Marking Material

Any opaque, nonfading, fast drying, weather resistant stencil ink, lacquer, paint, or enamel shall be used for stencil marking. When applied directly to the item, removable paint that is used for marking unboxed/uncrated equipment, conforming to MIL-P-52905, shall be used. A MIL-C-46168 or MIL-C-53039 coating shall be applied when stenciling containers that have had a top coat of chemical agent resistant coating (CARC) applied to them.

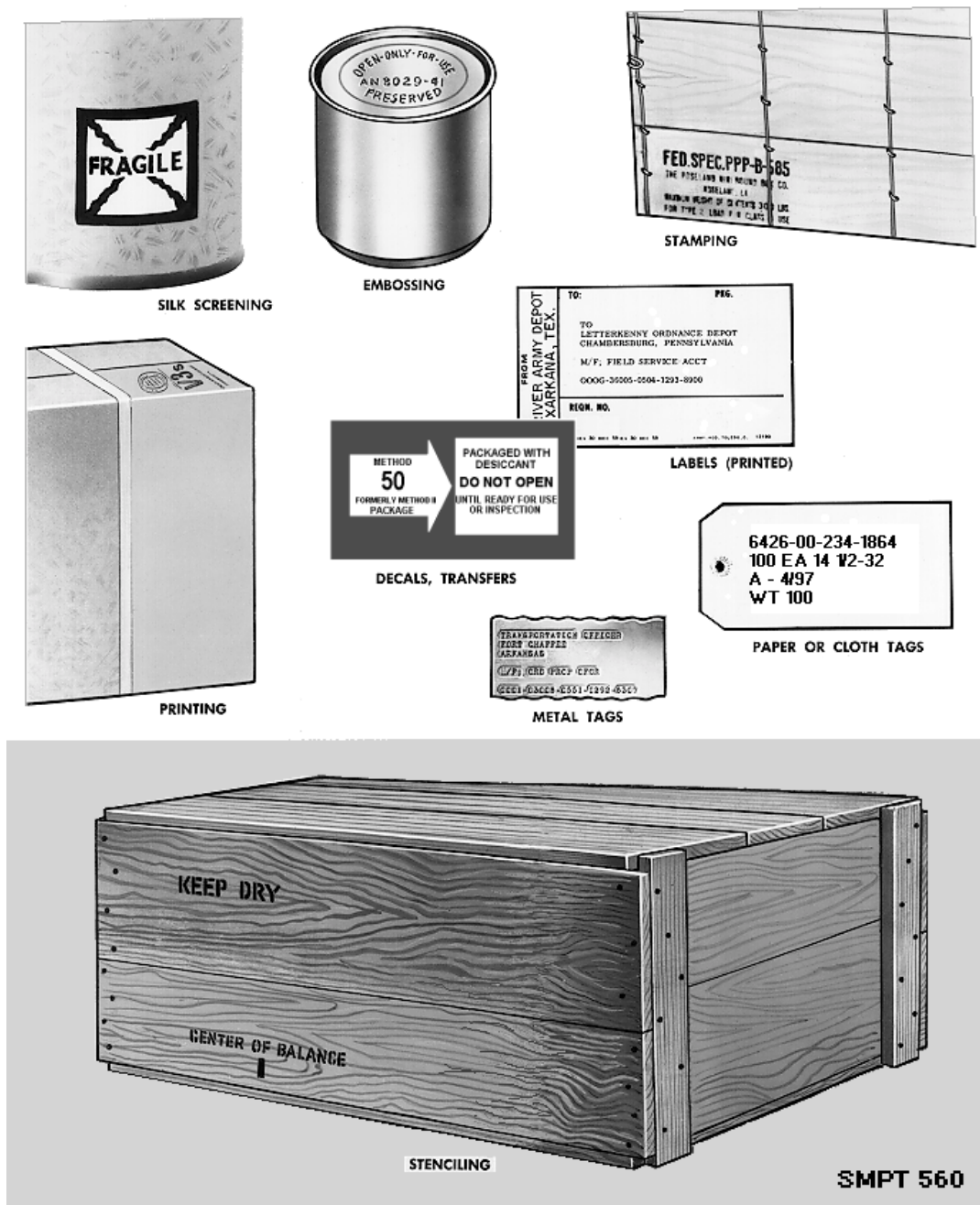


Figure 4-26. Methods of marking.

Obliterating lacquer, enamel, or paint (See figure 4-27.)

Any quick-drying, opaque lacquer, ink, enamel, or paint that approximates the color of the container shall be used for the obliteration of markings. When obliterating CARC painted markings on metal reusable container, paint conforming to MIL-C-46168 or MIL-C-53039, paint chip color Green-383 or Tan-686 of FED-STD-595, shall be used. Green shall be used on green or green camouflage, and tan shall be used on tan or desert sand camouflage colored containers.

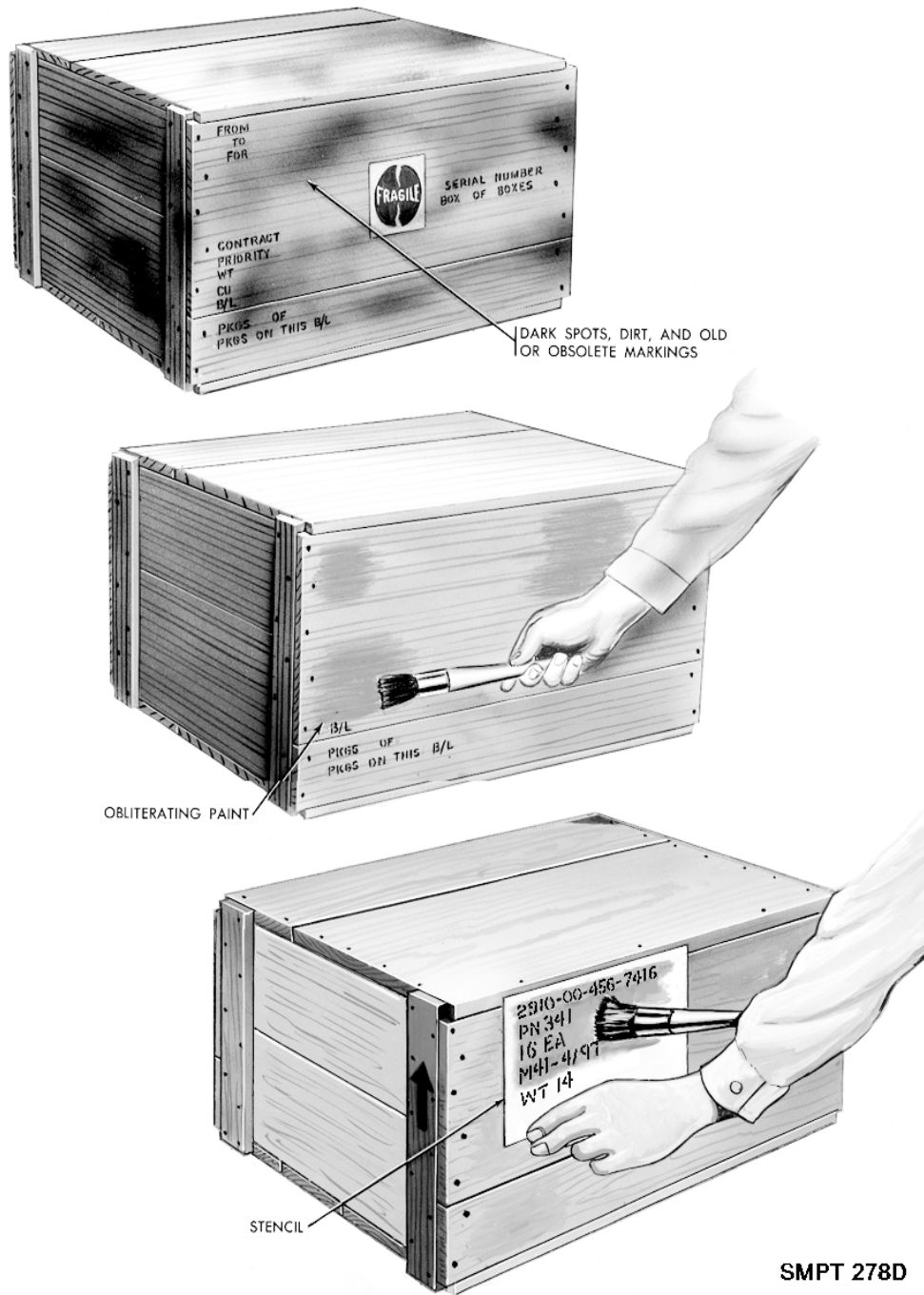


Figure 4-27. Use of obliterating material.

Lithographing, Embossing, Roller Coating, Or Stamping

When lithographing, embossing, or roller coating of markings is authorized, commercial enamels, lacquers, or inks in the color specified shall be used. When stamping is specified, commercial waterproof and petroleum-resistant inks, in the color specified, must offer sufficient durability on exposure to field service.

Labels, Paper, Pressure-Sensitive, Water-Resistant

Labels should be made of a water-resistant grade of paper, film, fabric, or plastic, coated on one side with water-insoluble, permanent type adhesive. The adhesive shall adhere to metal plastic, or fiberboard surfaces under high and low temperatures. Labels shall have a finish suitable for printing and writing on with ink without feathering or spreading, shall be capable of withstanding normal handling and storage conditions, and shall remain securely in position.

If labels for exterior containers, except vehicles and related items, are not inherently waterproof, they shall be waterproofed by coating the entire outer surface of the label with a transparent, waterproofing material.

Tags

A metal, cloth, plastic, paper, or other suitable durable material shipping tag, bearing the required markings, shall be used when specified herein or when it is impractical to stencil mark or apply a label on the container or unpacked item. Tags conforming to A-A-900 or UU-T-81 are recommended.

Water-Resistant Envelopes

Water-resistant envelopes shall be used for packing lists and materiel release/receipt documents. Securely affix or fasten the envelope to the package or container. Water-resistant envelopes such as those conforming to A-A-1658, A-A-1659, or A-A-1660 are recommended for containing packing lists and other documents.

General

Marking of unit packs, unpacked items, and exterior packs may be accomplished by the use of labels, stamping, stenciling, printing or tagging. Other processes such as lithographing, stamping, embossing, roller coating, bar coding laser marking, and applying decals may be used, when specified, or upon approval by the cognizant activity.

Condition of Surfaces to be Marked

Surfaces to be marked must be dry and free of oil and grease and shall be in a condition so that markings remain permanent, legible, and nonfading.

All markings not applicable to the shipment shall be obliterated. When shipping containers are consolidated into container vans for shipment to an ultimate consignee, obliteration of current address markings is not required. When original unopened packs are readdressed for shipment by a DOD shipping element, contract data markings shall not be obliterated unless they interfere with other required markings.

- X Legibility, color and durability of markings. Markings shall be applied by any means that provides clear, legible, durable, and nonfading markings sufficient to withstand normal exposure to environments and handling to which the package/container might be subjected. The size of the lettering shall be proportional to the size of the container.
- X Use of labels.
 - B Labels are permitted for markings on shipping containers when the type or size of shipping container does not permit stenciling.
 - B When labels are used, the required markings must be printed, typed, and reproduced.

- B Pressure-sensitive labels may be used on containers other than wood.
 - B When it is impractical to use a label, markings may be shown on tags.
- X Use of tags.
- B A metal, cloth, plastic, or paper shipping tag bearing the required markings may be used when specified or whenever the container or unpacked item is such that it is impracticable to stencil marking thereon or impractical to use a label. Tags may be attached with wire or twine. Wires should not be smaller than 23 gage tag wire or other suitable corrosion resistant metal fastener. When rusting of tag wire will affect or damage the item to which the tag is attached, then twine must be used for attaching tags. Markings on cloth or paper tags shall be printed with waterproof ink or typed. Markings on metal tags shall be accomplished with dies or punches. Markings on plastic tags shall be accomplished by use of stamping, stenciling, printing, perforating, embossing, or, when specified, by other processes such as lithographing, screening, photo marking, and applying decals or transfers.
 - B The methods of securing plastic tags may be accomplished by adhesion, cementing, sewing, clipping, stapling, tacking, or nailing.
- X Securing and protecting labels.
- B Labels will be securely affixed in place with water-resistant adhesives placed on complete underside of label, except when pressure-sensitive labels are used.
 - B Labels shall be waterproofed by coating the entire outer surface of the label with waterproof lacquer, varnish, clear acrylic coating compound, label adhesive or transparent tape. The label adhesive shall not smear or blur the markings.
 - B When vinyl or plastic coated pressure-sensitive labels are authorized for use, no further protective coating is required as long as all of the marking is an integral part of the label and not added after the original printing.
 - B An alternate method of affixing and protecting labels on fiberboard containers, metal containers, polyethylene, rubber products, and vehicles is through use of ASTM D 5486 transparent pressure-sensitive tape over the entire surface of the label.
- X Labels for unit packs.
- B The required markings on labels on unit packs shall be printed, typed, or reproduced.
 - B Pressure-sensitive labels may be used in lieu of paper labels.
 - B When clear (untinted) plastic containers are used for unit protection, the labels may be inserted or affixed inside the container if the label will not affect or be affected by the method of preservation and will not obscure more than 50 percent of one surface of the container.

Size of Markings

Lettering for all markings shall be capital letters of equal height and proportionate to the available space of the container.

Interior Containers and Unpacked Items

Marking on interior containers and unpacked items should be located to allow the markings to be easily read when stored on shelves or stacked, and to insure that the marking will not be destroyed when the pack is opened for inspection or until contents have been used. The marking surface of a unit pack shall be the outermost wrap, bag, or container of the unit pack. When a barrier bag is used within another unit container, both the bag and the outermost container must be marked.

The following minimum identification markings shall appear on unit and intermediate packs and unpacked items in the order listed. This requirement applies to all unit packs and intermediate containers repacked for shipment by military installations. Any additional identification markings required by the contract shall be placed either below these markings or in a conspicuous location on the identification-marked side of the container. Unit packs used as exterior containers at the time of packaging shall be marked in accordance with exterior markings. Hazardous items shall be marked with identification markings as specified herein and in 5.4 of MIL-STD-129.

- X NSN/NATO stock number (to include spaces or dashes and any prefix or suffix shown in the contract or requisition), in-the-clear and bar coded. If no NSN is assigned, then this line may be omitted. For ammunition, when a DOD Identification Code (DODIC) is specified, it shall be placed on the same line as the NSN/NATO stock number.
- X Part number (PN). The part number cited in the contract shall be shown (except for ammunition items with NSN/DODIC designations). If the item has no PN assigned to it or if no PN is required, then nothing is shown.
- X Quantity and UI. A nondefinitive UI shall be accompanied by a quantitative expression such as "1/RO (100 FT)."
- X Contract number or purchase order number including four-digit delivery order or call number.
- X Military method and date of unit preservation (e.g., "M41-4/97" - Method 41, from MIL-STD-2073-1C, was provided in April 1997). Use of the letter M in the first position indicates that the pack is a military preservation method; "41" is the method number; "4/97" indicates the date of preservation.
- X Serial number, when required. See figure 4-28.

Special Markings

Hazardous materials and supply type labels shall be applied as required.

Shelf-life markings. There are two types of shelf-life markings:

- X Type I. An item of supply having a definite (nonextendable) storage time period terminated by an expiration date which was established by empirical and technical test data.
- X Type II. An item of supply with an assigned storage time period which may be extended after the completion of prescribed inspection and/or restorative action.
- X Placement of markings. When shelf-life markings are required, they

shall be shown below the item identification data on unit packs, intermediate containers, exterior containers, and unpacked items. Shelf-life markings shall include the manufactured, cured, assembled or packed date (apply on date), and the expiration or inspect/test date, as appropriate. Guidance on shelf-life markings can be found in MIL-HDBK-129.

All method 50 unit and intermediate packs must bear a precautionary label or stamp.

All unit and intermediate packs of hazardous chemicals and materials must have the applicable warning label attached to the packs.

All unit and intermediate packs containing flammable (flashpoint not more than 141°F) liquids must be marked with the flashpoint of the material. The marking must be expressed in degrees Celsius and degrees Fahrenheit, in parenthesis, such as "FLASHPOINT 30°C (86°F)", and must be applied on the identification marked side by means of labeling, printing, stamping, or stenciling.

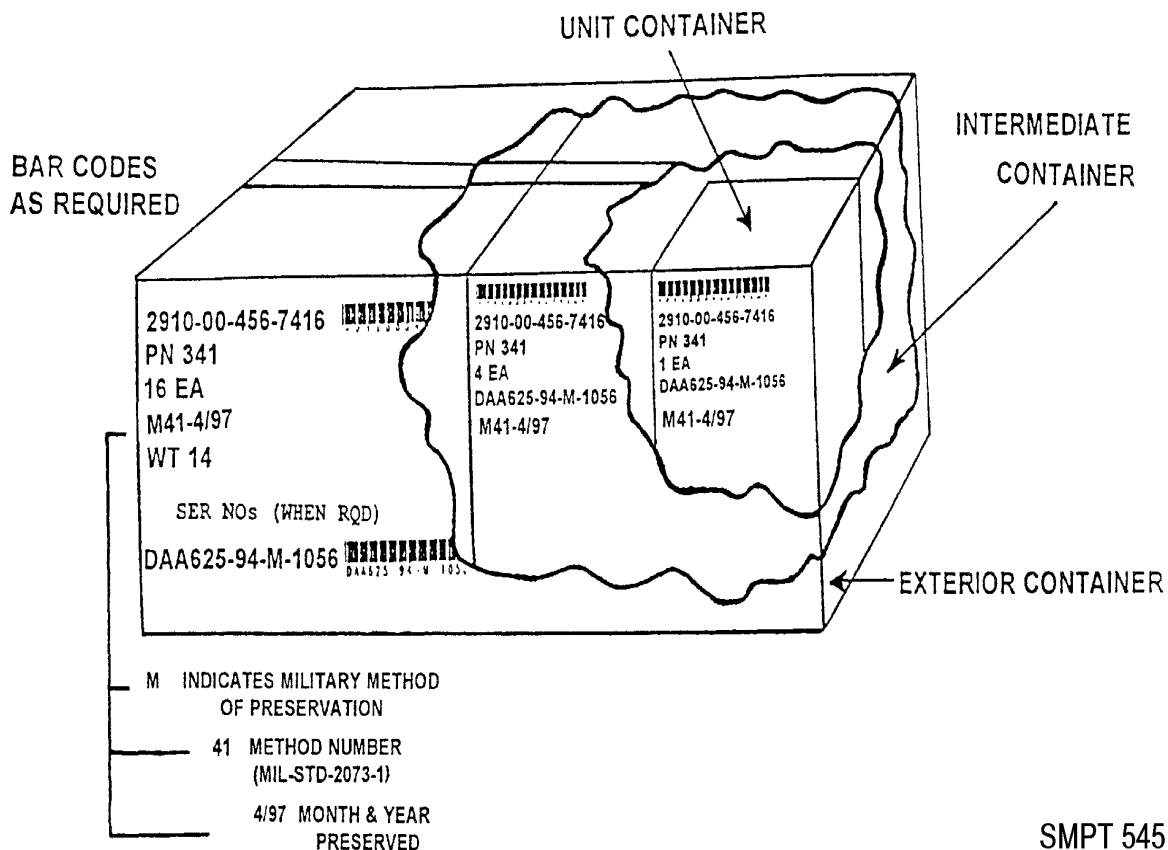


Figure 4-28. Unit, intermediate, and exterior IDENT and contractor markings.

Exterior Container Identification and Contract Data Markings

Required markings. The required markings shall be placed so as not to be obscured by cleats or strapping. Unless otherwise specified, one end and the top and bottom of containers shall always be free of any markings.

Exterior identification markings. Exterior identification markings shall be composed of the following information in the order listed. The words "national stock number," "part number," "quantity," "unit of issue," "method of pack," and "date" shall not be made a part of the marking.

- X NSN/NATO stock number (See unit markings).
- X Part number, (See unit markings).
- X Quantity and unit of issue.
- X Military method and date of unit preservation (e.g., "M41-4/97" - Method 41, from MIL-STD-2073-1C, was provided in April 1997). Use of the letter M in the first position indicates that the pack is a military preservation method; "41" is the method number; "4/97" indicates the date of preservation.
- X Serial number(s), when required.
- X Gross weight.
- X Proper shipping names and identification number (United Nations) for hazardous items only. The proper shipping name shall be placed below the gross weight.

NOTES: 1. The inspect/test date and other shelf-life markings, when required, shall be applied below the identification markings.

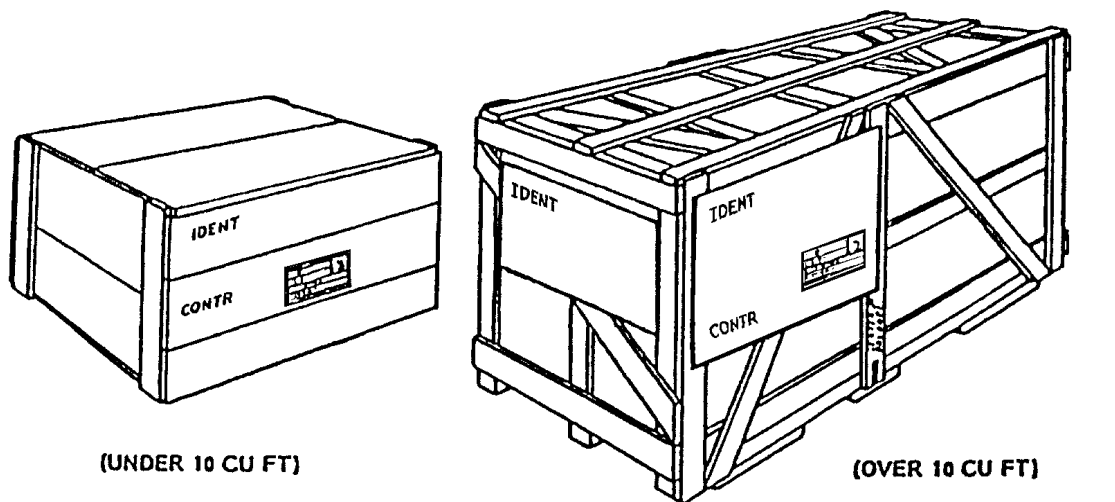
2. Boxes and crates 10 cubic feet and over shall have identification markings placed on the end of the container to the left of the identification-marked side, in addition to the identification side (figure 4-29).

Exterior Container Contract Data Markings (See Figure 4-28).

Contract data markings shall include the contract or purchase order number and delivery order or call number, and the modification for change order number (when used). Additional information may be required by the procurement contract or order. When more than one contract is applicable to a multipack, contract data markings are not required on the exterior container but shall be applied to each container in the multipack. Contract data markings shall be placed below the identification markings on the various exterior containers and unpacked items.

Unless specifically required by a military service or defense agency directive, contract data markings are not required on exterior containers when items are repacked for shipment by military installations.

For Defense Supply Center, Philadelphia (DPSC) Clothing and textile (C&T) items only, the use of labels is prohibited. The following additional markings are required: shipment number, lot number, and container number. The container number shall be consecutively numbered from each shipping point for the duration of the contract. For multiple container shipments of C&T items, the packing list shall be placed inside the last container to be loaded for each shipment. The words "PACKING LIST HERE" shall be stenciled on the container.



SMPT 581

Figure 4-29. Box 10 IDENT over or under 10 cubic feet.

Marking For Assorted Items

Related items. When an assortment of related items which cannot be identified under one stock number, but support a specific weapon system or end item, is packed in a shipping container, the level of protection afforded the pack, the date of pack, the gross weight, cube, and special markings shall be applied, plus a brief description of the contents in lieu of the identification data; e.g., spare parts for NSN XXX, Packing List enclosed. Kit or set components shall be suitably segregated and identified within the unit pack by part number or NSN.

Unrelated items. When containers of unrelated items comprised of mixed NSNs which do not support a specific weapon system or end item are consolidated into a shipping container. The word "MULTIPACK" shall be applied to the shipping container and the gross weight in lieu of the identification markings. Examples of marking are as follows:

MULTIPACK

WT 100

- X When a multipack shipment contains shelf-life material, the following statement will appear immediately below the identification markings: "CONTAINS SHELF-LIFE ITEMS." This is in addition to any shelf-life marking/data which may be placed on the multipack.
- X When a multipack shipment contains items that are covered by a warranty agreement, the following statement shall appear immediately below the identification markings: "WARRANTED ITEMS INSIDE."
- X When a multipack contains HAZMAT, PSNs with applicable ID numbers, and NA or UN identification numbers shall be marked on each applicable container in the multipack. They shall also be listed on the identification-marked side of the multipack.
- X Caution markings will be applied as required (e.g., Fragile, DOT Hazardous Labels, etc.).

Marking of Gross Weight

The capital letters "WT" shall precede gross weight numerals. All weights shall be numerically indicated and shall be expressed in pounds to the nearest pound.

When more than one contract is applicable to a multipack container, contract date is not required on the exterior container but shall be applied to each individual container within the multipack. Contract data is not required when items are repacked for shipment by military installations.

Packing list and DOD Single Line Item Release/Receipt Document, DD Form 1348-1A

Packing list

Sets, kits, or assemblies composed of unlike items but identified by a single stock number or part number, shall have a packing list identifying each item securely attached to the end or side of the container. Sets with two or more exterior shipping containers of different stock numbered or part-numbered items require a master packing list. One copy shall be attached to container No. 1 and one copy placed inside container No. 1. The contents of packages containing installation or assembly hardware such as brackets, connectors, nuts, bolts, and washers shall be listed in detail on the packing list. "Kit contents lists" shall be placed inside the "kit container" and shall not be included with the packing list on the outside of the exterior container. An additional packing list placed inside each container is recommended. For information on exceptions to the use of exterior container documentation, see below. Automated packing lists (APL) shall contain the minimum data listed in DOD 4000.25-1-M.

Exceptions to the use of Exterior Container Documentation, Such as Packing Lists, DD Forms 250, DD Forms 1155, and DD Form 1348-1A.

With the following exceptions, exterior container documentation is required on all contractor and DOD shipments. No exterior documentation is required for containers of like items or single-item packs when the contents are listed on a label attached to the boxes, lithographed or printed on the boxes, or when a manufacturer's part list is provided. For Foreign Military Sales (FMS) shipments, exterior container documentation is always required.

For controlled, sensitive, classified, and pilferable items (except for FMS shipments), the shipping documentation shall be placed inside all containers rather than on the outside. For classified shipments, markings, which indicate the classified nature of the materiel and its security classification, shall not appear on the exterior of each container. If a pilferable shipment is also an FMS shipment, the exception does not apply.

Single Stock Numbered Assembled Sets

Sets consisting of two or more exterior shipping containers consisting of unlike stock numbered items, packed in more than one shipping container, require a packing list for each container. The packing list shall be attached to the exterior of each container. A master packing list shall be prepared for the set and a copy attached to container No. 1.

DD Form 250 (Materiel Inspection and Receiving Report)

The DD Form 250 should be used as a packing list for contractor shipments and shall be applied to exterior containers, as applicable. Packing list copies shall be in addition to the copies required for standard distribution in the DFAR Supplement to the Federal Acquisition Regulation (DFAR Supplement) and shall be marked "Packing List." On multiple container shipments, contractors

shall, when either specified in the contract or requested by the procuring activity/installation, place a packing list inside each container in addition to attaching a packing list to the outside of each container.

DD Form 1155 (Order for Supplies or Services/ Request for Quotation)

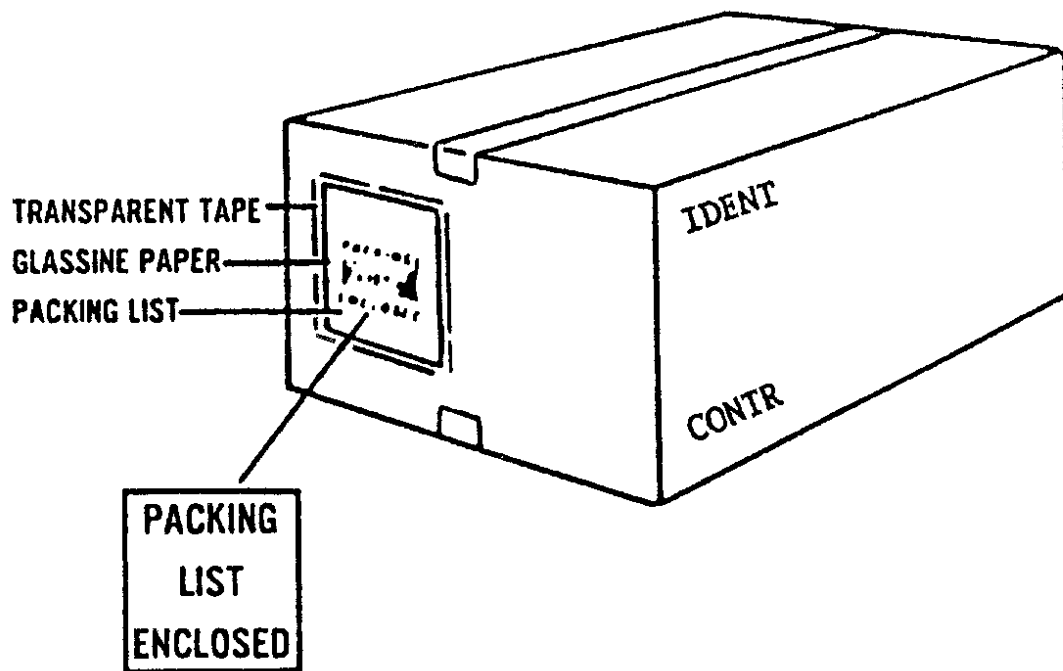
DD Form 1155 shall be attached to the commercial packing list used by vendors and shall be applied to exterior containers, as applicable. When specified, the case number and the requisition number shall be included.

Application of Packing Lists

Exterior packing lists shall be sealed in water-resistant envelopes and secured to the exterior of the palletized load or container in the most protected location. An illustration on placement of a packing list is in figure 4-30.

Shipment Units Of Single-Line Items

For single-line item shipments, one legible copy of the DD Form 1348-1A shall be attached to the materiel in shipping container No. 1. In addition, at least one legible copy of the applicable form shall be enclosed in a water-resistant envelope attached to the outside of the shipping container. When the storage container is used as the shipping container, the copy normally placed inside the container shall be enclosed with the copy attached to container No.1



SMPT 582

Figure 4-30. Recommended packing list application per MIL-HDBK-129.

Shipment Units of Multiple-Line Items

For multiple-line item shipments, one copy of the DD Form 1348-1A shall be placed in a water-resistant envelope so that the NSN is visible. The envelope shall be attached to the package applicable to each requisition. When a polyethylene bag is used to group single items for packing, the same bag shall contain a DD Form 1348-1A folded so that the identification and requisition information are visible. At least one copy of the form, applicable to each requisition, shall also be placed in a water-resistant envelope attached to the exterior of each multipack container.

Methods of attaching documentation to fiberboard boxes

DD Forms 1348-1A and APLs shall be attached to fiberboard boxes in the following manner. Prior to sealing the fiberboard box, place the appropriate papers in a water-resistant envelope. Then place the envelope under the flaps of the box so that the open end/flap of the envelope extends down the end of the box under the closure tape. Place the words "PAPERS HERE" on the tape in letters at least half an inch high directly over the envelope containing the papers. This is not authorized for FMS shipments, except for those sent by registered mail. When shrink or stretch film is used to consolidate multiple items, one copy of the DD Form 1348-1A shall be attached to the materiel. For single items, two copies of the applicable form shall be placed under the shrink film in such a manner as to be read. This method is not authorized for FMS shipments.

Method of Attaching Accompanying Documentation for Shipments of Vehicles

A minimum of two copies of the DD Form 1348-1A or DD Form 250 shall be provided and shall be securely attached in or on the vehicle as follows:

- X Interior. Place one copy of the shipping document and one copy of the preservation/depreservation guide within a sealed bag conforming to Type I, Class B, Style 2 or 3 of MIL-B-117 or within a water-resistant envelope. Attach the bag or envelope to a conspicuous location inside the vehicle.
- X Exterior. Place the one remaining copy of the shipping document and the preservation/depreservation guide, unit packed as specified above, on the vehicle adjacent to the shipping address and securely attach the bag to the envelope.

Exceptions to the use of Exterior Container Documentation, Such as Packing Lists, DD Forms 250, DD Forms 1155, and DD Form 1348-1A

With the following exceptions, exterior container documentation is required on all contractor and DOD shipments:

No exterior documentation is required for containers of like items or single-item packs when the contents are listed on a label attached to the boxes, lithographed or printed on the boxes, or when a manufacturer's part list is provided. For FMS shipments, exterior container documentation is always required.

For controlled, sensitive, classified, and pilferable items (except for FMS shipments), the shipping documentation shall be placed inside all containers rather than on the outside. For classified shipment, markings, which indicate the classified nature of the materiel and its security classification, if it will identify the classified nature of the shipment, shall not appear on the exterior of each container. If a pilferable shipment is also an FMS shipment, the exception does not apply.

Address Markings

Application of Address Marking

The domestic and overseas shipment address markings shall be applied by means of stencils, labels, or tags. When the use of labels will interfere with or obscure other required markings on shipping containers, tags shall be used. Separate tags shall be used for identification markings and address markings.

Contractors have the option of applying the address markings by means of stenciling or screening provided procurement costs are not increased.

Military Shipment Address Label as Shown in Figure 4-31 (Except Parcel Post)

Transportation Priorities (TPs) 1, 2, and 3 shall be identified by a TP machine printed numeral stenciled stamped, hand lettered or affixed with a stick-on numeral in the TP block of the address Label (DD Form 1387). Minimum height of the TP numeral shall be 3/4 inch. When an automatic (preprinted) marking system is used, TPs 1, 2, and 3 shall be identified by the TP numerals preprinted (printed with the same color ink as other data on the label) in the TP block of the DD Form 1387.

For shipments other than mail, the address label shall be completed as follows:

- X TCN: Enter the 17-character (alphanumeric) TCN in both forms (bar coded and in-the-clear).
- X Postage data: Leave blank.
- X From: Enter DOD activity address code (DODAAC) and in-the-clear address of the shipping activity. (See DOD 4000.25-D, DOD Activity Address Directory.)
- X Type service: Enter Air Express, Blue Label, Overnight Delivery, etc., as applicable. If none, leave blank.
- X Ship-to/Port of Embarkment (POE): Enter 3-digit air/water port code along with in-the-clear port address, if appropriate.
- X Transportation priority: Enter applicable transportation priority.
- X Port of Debarkment (POD): Enter 3-digit POD port designator from DOD 4500.32-R (MILSTAMP), if appropriate.
- X Project: Enter project code, if applicable.
- X Ultimate consignee or Mark for: Enter the DODAAC (bar coded and in-the-clear); also, enter the complete address of consignee.
- X WT. (this piece): Enter actual weight.
- X Required Delivery Date (RDD): Enter required delivery date, as applicable.
- X CUBE (this piece): Enter cube.
- X Charges: Entry mandatory for FMS shipments. Enter CONUS inland freight charges on label of number one piece of shipment unit.
- X Date shipped: Enter four-position julian date (e.g., 8180) or the in-the-clear date (e.g., 29 Jun 88).
- X FMS case number: Enter as appropriate.
- X Piece number: Enter bar coded and in-the-clear.
- X Total pieces: Enter total pieces in shipment unit.




1. TRANSPORTATION CONTROL NUMBER  N6287681176602XXX		2. POSTAGE DATA	
3. FROM DEFENSE DISTRIBUTION CENTER NEW CUMBERLAND, PA 17070		4. TYPE SERVICE SPA/FT	
5. SHIP TO/POE SUU SUU COMMERCIAL TRAFFIC OFFICER TRAVIS AFB CA 94535		6. TRANS PRIORITY 1	
7. POO HICKAM AFB, HAWAII		8. PROJECT ZF7	
9. ULTIMATE CONSIGNEE / MARK FOR  N62876 SUPPLY OFFICER 129TH INFANTRY BATTALION FT SHAFTER, HAWAII		10. WT. 00002	11. ROD 999
		12. CUBE 00001.7	13. CHARGES
		14. DT SHIP (enter date)	15. FMS CASE NUM
SMPT 2862D		16. PIECE NO 00001	
		17. TOTAL PIECES 00001	ZKB3K

Figure 4-31. DD Form 1387 Military Shipment label.

For mail shipments, the label shall be completed as follows:

- X TCN: Enter the 17-character (alphanumeric) TCN in both forms (bar coded and in-the-clear).
- X Postage data: Use one of the following:
 - B For metered mail, leave blank and attach the stick-on metered postage values to or near this block.
 - B For permit imprint mail, enter the appropriate service/agency mail authorization.

Example: First Class Mail
Postage and Fees Paid
Defense Logistics Agency
Permit No. G-53

- B For standard penalty indicia mail, enter the appropriate service/agency name or abbreviation and its sampling number.

Example: Postage and Fees Paid
Department of the Navy
DO-316

From: Enter the in-the-clear address of the shipping activity, including the zip code. The phrase "OFFICIAL BUSINESS, PENALTY FOR PRIVATE USE \$300" must be printed on the bottom line of this block.

Type service: Enter First Class-Priority Mail, Express Mail, Military Ordinary Mail, etc., as applicable.

Ship to/POE: For CONUS mail, enter the complete address of the consignee, including the nine-digit zip code. For mail to overseas locations, enter postal concentration at DTS port or MILSTAMP Air/Water Port identifier (APO/FPO).

Transportation priority: Enter appropriate transportation priority.

POD: Leave blank.

Project: Enter project code, if appropriate.

Ultimate consignee or Mark for: Enter DODAAC of consignee (bar coded and in-the-clear). For CONUS, no other data; for overseas shipments, add detailed address.

WT. (this piece): Enter actual weight.

RDD: Enter, if applicable.

Cube (this piece): Enter cube.

Charges: Leave blank.

Date shipped: Enter the four-digit date (day of the year) (e.g., 8181) or the in-the-clear date (e.g., 29 Jan 98).

FMS case number: Enter, if applicable.

Piece number: Enter bar coded and in-the-clear.

Total pieces: Enter total pieces in shipment unit.

For unit moves: The address label should be completed as follows:

- X **TCN:** Enter the 17-characters (alphanumeric) TCN for shipments entering the DTS, as applicable, bar coded and in-the-clear.
- X **Postage Data:** Leave blank.
- X **From:** Enter the DODAAC and in-the-clear address of the shipping activity.
- X **Type service:** Leave blank.
- X **Ship to POE:** Enter three digit air/water port code and in-the-clear port name.
- X **Transportation Priority:** Leave blank. (There is no TP on unit moves.)
- X **POD:** enter three digit air/water POD code. (May be coded and/or in-the-clear.) For classified moves, leave blank.
- X **Project:** Enter project code, if applicable.
- X **Ultimate Consignee/Mark for:**
Enter:
 Unit Identifier Code (UIC).
 Vehicle bumper number, if applicable.
 Vehicle serial number.
 Equipment description. (TMCR 56-69, paragraph 21-3, Labels will contain descriptive data for ease of matching labels with equipment.)
 Vehicle/cargo dimensional data (length (L) width (W), height (H); dimensional data will assist cargo handlers in determining whether a piece can fit in a given area.)
 Classified moves: Do not enter POD. (See MILSTAMP, Volume I, appendix G, paragraph a(3))

- B **Weight (this piece):** Enter actual weight.
- B **RDD:** Enter, if appropriate.
- B **CUBE (this piece):** Enter cube.

- B **Charges:** Leave blank.
- B **Date Shipped:** Leave blank.
- B **FMS Case Number:** Leave blank.
- B **Piece number:** Enter bar coded and in-the-clear.
- B **Total Pieces:** Enter total pieces in shipment unit.

Special Markings

Set or assembly markings refer to figure 4-32. When a set or assembly is placed in two or more containers, all containers with component parts are shipped together.

Each container will have its own number within the set, total number of containers making up the set and the number of the set with each shipment. Set or assembly markings shall be placed in the lower right-hand corner of the identification-marked side of the container.

A 2-inch disc of a high contrast color shall be placed above the numbers on each container.

All component parts of disassembled items will have the serial number of the item on each container of the set. Example: The disc, followed by SET 1 then PK 1 of 5, and under the package numbers, SERIAL 18063.

If the item has no serial number, a date (month, day, year) followed by a capital letter to identify a set or assembly shall be shown on the shipping container in lieu of a serial number. Each set shall bear a different letter. Examples are:

SET 1	SET 2	SET 2
PK 1 of 2	PK 1 of 2	PK 1 of 2
4-1-96A	4-1-96B	4-1-96C
SET 2	SET 2	SET 2
PK 2 of 2	PK 2 of 2	PK 2 of 2
4-1-97A	4-1-97B	4-1-97C

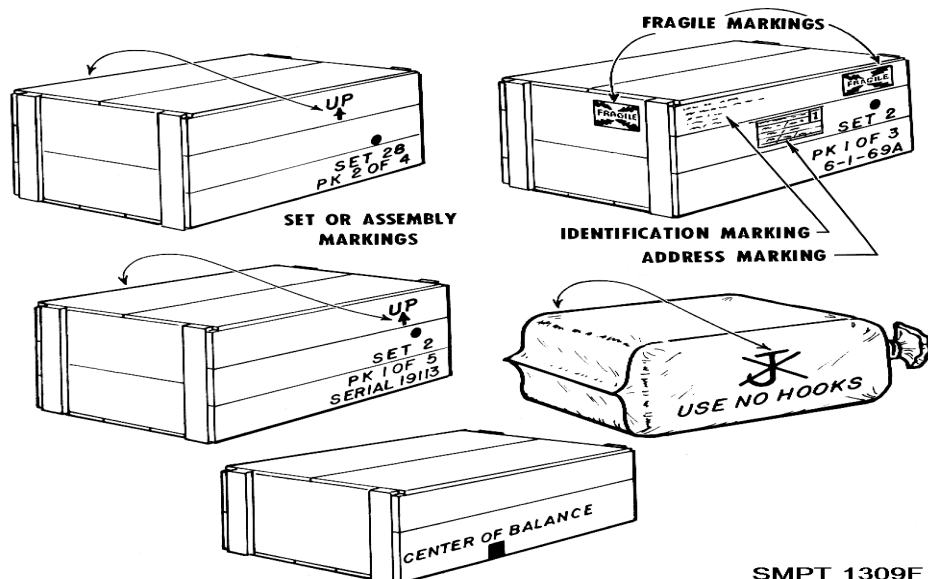


Figure 4-32. Examples of handling markings.

Single Stock Numbered Sets

This marking is used when the components of a single stock numbered item are packed in two or more shipping containers or stored together as a set.

The stock number shown on each shipping container will be that of the complete set and prefixes with P/O (part of).

Method 50 Marking

Method 50 packs which are shipping containers must bear a precautionary label on the identification marked side.

Method 50 markings may be applied by means of labels, or a copy of the label may be printed or stenciled on the container using waterproof red ink.

When there is insufficient space for labeling, the words "METHOD 50 PACKAGE, DO NOT OPEN UNTIL READY FOR USE," in letters as large as space permits must be printed or stenciled on the container. See figure 4-33.

Serial Number

When required, the shipping container will be marked with the assigned serial number. The words "Serial No." will be used to identify the information indicated and located directly below the identification marking. (Example: Serial No. 26481.)

Medical Material

Containers packed with frozen medical material shipments (constant temperature must remain below 32EF) must have completed PERISHABLE--KEEP FROZEN labels (DD Form 1502), figure 4-34, applied to the address side of each container. The applicable icing and time data are to be inserted on the labels at time of shipment. In addition, "ARROW" and "FRAGILE" markings must be applied to containers of frozen medical items. When shipping by military air transportation, a completed DD Form 1387-2 (Special Handling Data/Certification Form) is required and must be applied to the address side of the container. Three copies of the form will also be affixed to the "one end" of the container in a waterproof envelope.

Containers packed with chilled medical material shipments (constant temperatures must be maintained between 35 Eand 46EF) must have completed PERISHABLE--KEEP CHILLED labels (DD Form 1502-1), figure 4-35, applied to the address side of each container. The applicable icing and time data are to be inserted on the labels at time of shipment. In addition, "ARROW" and "FRAGILE" markings must be applied to containers of chilled medical items. A completed DD Form 1387-2 is required and must be applied to the address side of the container when shipment is via military air transportation. Three copies of the form will also be affixed to the "one end" of the container in a waterproof envelope.

Containers packed with limited unrefrigerated medical material shipments out of refrigeration (when receipt of shipment by consignee is assured within a specified number of days) must have PERISHABLE labels (DD Form 1502-2), figure 4-36 applied to the address side of the each container. The data applicable to time of removal from refrigeration are to be inserted on the label at time of shipment. In addition, "ARROW" and "FRAGILE" markings must be applied to containers of perishable medical items. A completed DD Form 1387-2 is required and must be applied to the address side of the container when shipment is via military air transportation. Three copies of the form will also be affixed to the "one end" of the container in a waterproof envelope.



SMPT 583

Figure 4-33. Method 50 Marking.

FROZEN MEDICAL MATERIEL SHIPMENT				<i>Form Approved</i> <i>OMB No. 0704-0188</i>	
<small>Public reporting burden for this collection of information is estimated to average 5 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, D.C. 20503. Please DO NOT RETURN your form to either of these addresses.</small>					
PERISHABLE - KEEP FROZEN					
VACCINE → TEMPERATURE MUST BE MAINTAINED BELOW 32 °F					
REQUIRED DELIVERY DATE <i>(Calendar date)</i> 9/25/98					
THIS PACKAGE PACKED AT ORIGIN					
DATE	TIME	POUNDS OF DRY ICE	BY <i>(Name)</i>		
9/22/98	1030	6	R. SMITH		
IMPORTANT					
To insure delivery of this vaccine in a satisfactory condition, it is necessary that this container be re-iced with DRY ICE on or before time indicated below. <i>(Greenwich Meridian Time is used for overseas shipments.)</i> 6 POUND(S) DRY ICE WILL SAFEGUARD CONTENTS FOR _____ HOURS WHEN RE-ICING IS DONE. AT FIRST RE-ICING POINT, CROSS OUT PREVIOUS BLOCK <i>(Left column below)</i> AND ENTER NEW DATE AND TIME NEXT RE-ICING IS DUE.					
MUST BE DRY RE-ICED NOT LATER THAN ↓		DRY ICE ACTUALLY ADDED			
DATE	FIRST DRY RE-ICING →	DATE	POUNDS	DRY ICED BY	
9/25/98		DATE	POUNDS	DRY ICED BY	
HOUR	SECOND DRY RE-ICING →	DATE	POUNDS	DRY ICED BY	
HOUR		DATE	POUNDS	DRY ICED BY	
INSTRUCTIONS					
Break tape on outer container and insert necessary dry ice. IMMEDIATELY re-seal outer container and RECORD this operation on the log above. DO NOT handle this vaccine or permit container to remain open longer than is necessary for DRY re-icing. NOTE: FAILURE TO COMPLY WITH INSTRUCTIONS MAY ENDANGER LIVES. If materiel has thawed or if shipment arrives without dry ice, refreeze immediately. Report details by fastest means to Defense Personnel Support Center (DPSC), Directorate of Medical Materiel, 2800 S. 20th Street, Philadelphia, PA 19145-5099. Document discrepancies in accordance with AR 55-38/NAVSUP PUB 459/AFM 75-34/MCOP 4610.19/DLAR 4500.15. DO NOT issue or destroy materiel until disposition instructions are received from DPSC.					

DD Form 1502, MAY 96 (EG)

Previous editions are obsolete.

SMPT 2196B

Figure 4-34. Frozen medical material shipment form.

CHILLED MEDICAL MATERIEL SHIPMENT				<i>Form Approved OMB No. 0704-0188</i>	
Public reporting burden for this collection of information is estimated to average 5 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, D.C. 20503. Please DO NOT RETURN your form to either of these addresses.					
PERISHABLE - KEEP CHILLED					
TEMPERATURE MUST BE MAINTAINED AT 35 ° F TO 46 ° F					
REQUIRED DELIVERY DATE <i>(Calendar date)</i> 9/26/98					
THIS PACKAGE PACKED AT ORIGIN					
DATE 9/22/98	TIME 1030	POUNDS OF WATER ICE 8	BY <i>(Name)</i> R. SMITH		
<p style="text-align: center;"><u>IMPORTANT</u></p> <p>To insure delivery of this vaccine in a satisfactory condition, it is necessary that this container be re-iced with water on or before time indicated below. <i>(Greenwich Meridian Time is used for overseas shipments.)</i></p> <p>_____ POUND(S) WATER WILL SAFEGUARD CONTENTS WHEN RE-ICING IS DONE. AT FIRST RE-ICING POINT, CROSS OUT PREVIOUS BLOCK <i>(Left column below)</i> AND ENTER NEW DATE AND TIME NEXT RE-ICING IS DUE.</p>					
MUST BE WATER RE-ICED NOT LATER THAN <div style="text-align: center;">↓</div>		WATER ICE ACTUALLY ADDED			
DATE 9/26/98	FIRST WATER RE-ICING →	DATE	POUNDS	WATER ICED BY	
HOUR 1030		HOUR			
DATE	SECOND WATER RE-ICING →	DATE	POUNDS	WATER ICED BY	
HOUR		HOUR			
<p style="text-align: center;"><u>INSTRUCTIONS</u></p> <p>Break tape on outer container and insert necessary water ice. IMMEDIATELY re-seal outer container and RECORD this operation on the log above. DO NOT handle this vaccine or permit container to remain open longer than is necessary for water icing.</p> <p>NOTE: FAILURE TO COMPLY WITH INSTRUCTIONS MAY ENDANGER LIVES.</p> <p>If materiel has frozen or if temperature has exceeded 46 ° F, refrigerate IMMEDIATELY. Report details by fastest means to Defense Personnel Support Center (DPSC), Directorate of Medical Materiel, 2800 S. 20th Street, Philadelphia, PA 19145-5099. Document discrepancies in accordance with AR 55-38/NAVSUP PUB 459/AFM 75-34/MCOP 4610.19/DLAR 4500.15. DO NOT issue or destroy materiel until disposition instructions are received from DPSC.</p>					

DD Form 1502-1, MAY 96 (EG)

Previous editions are obsolete.

SMPT 2195B

Figure 4-35. Chilled medical material shipment form.

LIMITED UNREFRIGERATED MEDICAL MATERIEL SHIPMENT			<i>Form Approved OMB No. 0704-0188</i>		
<small>Public reporting burden for this collection of information is estimated to average 5 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, D.C. 20503. Please DO NOT RETURN your form to either of these addresses.</small>					
PERISHABLE					
REQUIRED DELIVERY DATE <i>(Calendar date)</i> 9/26/98					
<u>IMPORTANT</u>					
This package contains Medical Materiel which may be unrefrigerated during transit provided the cumulative time out of refrigeration does not exceed 96 hours after removal time indicated below. This materiel must be returned to refrigeration upon receipt. If delayed in route, return to refrigeration of 35° F to 46° F temperature.					
REMOVED FROM REFRIGERATION			RETURNED TO REFRIGERATION		
DATE	HOUR	PLACE	DATE	HOUR	PLACE
9/22/98		DMT			
<p style="text-align: center;">NOTE: FAILURE TO COMPLY WITH INSTRUCTION MAY ENDANGER LIVES.</p> <p>DO NOT FREEZE or allow to be subjected to temperature above 95° F at any time. If material has been frozen or if temperature has exceeded 95° F refrigerate immediately. Report details by fastest means to Defense Personnel Support Center (DPSC), Directorate of Medical Materiel, 2800 S. 20th Street, Philadelphia, PA 19145-5099. Document discrepancies in accordance with AR 55-38/NAVSUP PUB 459/AFM 75-34/MCOP 4610.19/DLAR 4500.15. DO NOT issue or destroy materiel until disposition instructions are received from DPSC.</p>					

DD Form 1502-2, MAY 96 (EG)

Previous editions are obsolete.

SMPT 2194C

Figure 4-36. Limited unrefrigerated medical shipment.

Project Code Markings

When required, project code labels shall be applied to exterior containers. The project code shown in the requisition or procurement document (e.g., ARI, ABC, etc.), shall appear in the address and also on a white label having a black bordered disc superimposed on it. If more than one project is required, all project codes may be put on one label. Label sizes shall be 3 by 3 inches with a 2-inch diameter disc or 9 by 9 inches with a 6-inch diameter disc, with both having proportionate black lettering. The project code may also be applied directly on a container. When markings are applied by tags, the project code shall be placed on the identification tag adjacent to the identification markings. The project code markings shall be applied as follows:

- X Rectangular container, consolidation containers, and palletized loads - two discs, one on each side.
- X Cylindrical containers - two discs equally spaced on the circumference.
- X Irregularly shaped containers and loose or unpacked items - stenciled or printed on identification-marked side of a tag.
- X Vehicles or other major unpacked items - one disc on the markings board, or one disc applied directly on a vehicle by a waterproof, pressure-sensitive tape such as ASTM D 5486. The tape shall be placed over the label and extend a minimum half inch from all edges off the label.
- X Postal - one disc adjacent to the address marking.
- X MILVANs/SEAVANs - not marked. However containers or items comprising the load shall be marked.

Handling Markings

Many times people confuse handling markings with special markings. Each one has a different purpose. Earlier, we covered special markings and found that they are used to meet certain marking requirements. Let's discuss handling markings. They are used when special handling instructions, markings, and warnings are required by official regulations.

Special Handling Data/Certification Label (DD Form 1387-2)

The DD Form 1387-2 as shown in figure 4-37 shall be applied to each piece of cargo to be shipped via military/ commercial air when it is necessary to identify the characteristics, precautionary measures and special instructions for the safe and/or proper handling of classified, and other shipments requiring special handling.

Fragile markings

Exterior containers containing delicate or fragile articles shall be marked by means of a fragile label, stenciling or stamping. When space permits, the fragile symbol shall be placed on the identification marked side and either end of a rectangular container. The fragile symbol shall be placed on two equally spaced areas on the circumference of cylindrical containers. Two symbols are required. Fragile labels shall be secured and waterproofed with water-resistant adhesive. When vinyl or plastic coated labels are used, no protective coating is required. Shipping containers imprinted on the top and bottom with GLASS--DO NOT DROP OR THROW, or GLASS-HANDLE WITH CARE, or similar markings do not require fragile labels. The labels, stencils, etc., will be placed so as to be conspicuous but not interfering with other markings. See figure 4-32.

ITEM NOMENCLATURE		NET QUANTITY PER PACKAGE	TRANSPORTATION CONTROL NO.	
		CONSIGNMENT GROSS WEIGHT	DESTINATION	
SUPPLEMENTAL INFORMATION			LOAD STORAGE/GROUP	
			FLASH POINT	
This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Dept of Transportation. THIS IS A MILITARY SHIPMENT! (Complete applicable blocks below)				
This shipment is within the limitations prescribed for PASSENGER AIRCRAFT / CARGO AIRCRAFT ONLY (Delete nonapplicable aircraft)		ATA/IATA/MCO REGULATIONS		
AFR 71-4, TM 38-250, NAVSUPPUB 505, MCO P4030.19, DLAM 4145.3, Paragraph				
DOD 4500.32R (MILSTAMP)		49 cfr	173.7 (a)	DOT-E 7573
ADDRESS OF SHIPPER		TYPED NAME, SIGNATURE AND DATE		
DD Form 1387-2, JUN 86		Form Approved / OMB No. 0704-0188		
SPECIAL HANDLING DATA / CERTIFICATION				

SMPT 741

Figure 4-37. Examples of special markings (shelf-life, project code, and transportation special handling/protective services markings).

Arrows

Arrows are used to insure proper stacking of containers when the contents of the container need to be stacked with the top surface up. When placed on containers (rectangular or cylindrical), the word UP will be stenciled on two sides of the container with an arrow towards the top of the container. Length of the arrow will not be less than 1 inch and the stem not less than 1/2 inch and proportioned to the available space. Arrows are intended to indicate or supplement the words "UP" or "TOP." These markings are affixed only when necessary. The word UP may be above, below, or on the stem of the arrow. See figure 4-32.

Center of Balance and Sling Points or Lifting Points

A 1-inch wide vertical line not less than 3 inches long and locating the center of balance must be extended up from the bottom of both sides of containers regardless of its length. The words "CENTER OF BALANCE" will be stenciled or printed in 1-inch letters above or alongside the center of balance mark. Sling points will be marked on unboxed equipment with white letters. Light colored surfaces will be marked in black (example: SLING POINTS). On vehicles which are painted white, yellow or other light colors, the marking shall be black and the words, "LIFT HERE" with arrows pointing to the lifting eyes shall be placed immediately above or alongside of the lifting eyes. See figure 4-32.

Load-Bearing Areas and Lift Points

These markings are required when shipping containers and contents are subject to damage by twisting, bending, or uneven container stresses. The words "LOAD BEARING AREA" will be marked on two opposite panels of the container directly over the load bearing areas. The words "FORKLIFT AREA" will be placed directly over the forklift entry points of the skid and rubbing strip.

Legend "USE NO HOOKS"

When required, the legend "USE NO HOOKS" in letters not less than 1 2 inches in height should be stenciled on both sides of shipping containers in which the contents are susceptible to damage by the use of hooks. In addition, a hook symbol with a superimposed "X" sufficiently heavy to convey the intended prohibitory use of the hooks should be placed directly above the legend. See figure 4-32.

Magnetic Materials Markings as Shown in Figure 4-38

When you are required to pack magnetic material for shipment, you should show whether or not the material is being shipped by military aircraft. It is important to know this, so that the proper magnetic materials label may be used. Boxes, packages, and items containing magnetized material suitable for shipment by military aircraft in conformance with MIL-S-4473, shall be marked in accordance with MIL-STD-129. Magnetized materials suitable for shipment by commercial air shall be marked in conformance with CFR 49. Boxes, packages, and items containing magnetized material not suitable for shipment by military aircraft in conformance with MIL-S-4473, shall be conspicuously marked on two opposite sides with a red caution label having white lettering. Magnetic tapes data shall be conspicuously labeled on both interior and exterior containers.

Structural Markings

When required, structural markings such as "REMOVE TOP FIRST" or "TO OPEN TOP: REMOVE SCREWS", shall be placed on shipping containers on or near the structure described. Containers designated as "reusable" shall include sufficient structural markings to provide instructions for opening and unpacking without causing damage to the container, packing materials, and the container's contents.

As you have just seen, handling markings are very important to our packs. When they are used properly, we are relatively sure our packs will arrive safely at their destination.

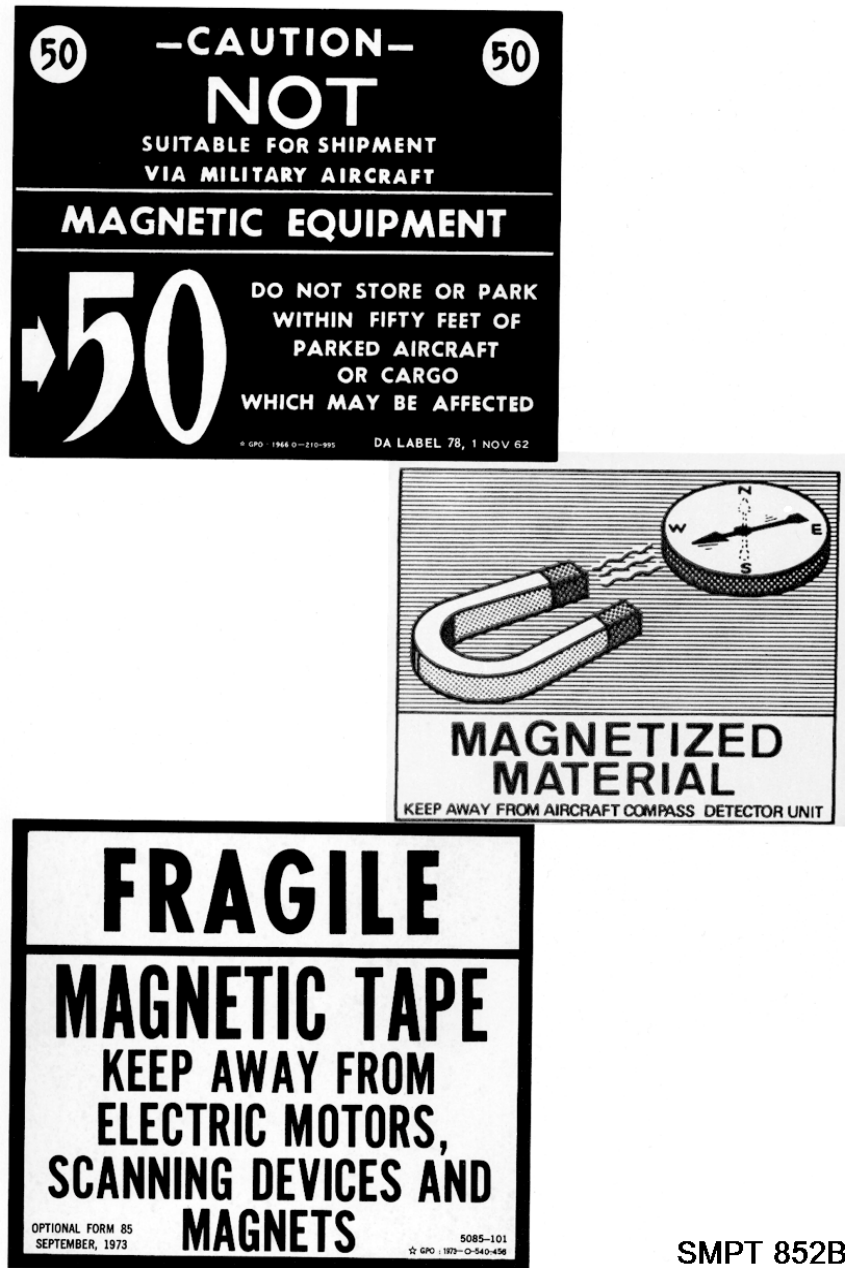


Figure 4-38. Labels for magnetic materials.

Expedited Handling Markings as Shown in Figure 4-39

Requisitions and contracts identified as NMCS (Not Mission Capable Supply) shipments shall have an NMCS code shown in the required delivery date block of the address label.

The applicable code is 999 or the letter "N" which may be followed by RDD expressed in the number of days from the requisition dates.

In addition to appearing on the address label, NMCS condition 999 shipments shall be marked with two 999 labels on each container.

For NMCS condition other than 999, containers shall be marked with two NMCS labels.

One label shall be placed adjacent to the address marking, and one shall be placed on the opposite side.

Pictorial Symbols for Marking (see figure 4-40)

Containers should be marked with pictorial symbols to indicate special handling and storage needs, such as "TEMPERATURE LIMITS, DO NOT STACK, DO NOT DROP, DO NOT ROLL, CLAMP HERE, FRAGILE, HANDLE WITH CARE, KEEP AWAY FROM HEAT and KEEP AWAY FROM COLD." They may appear on a label or be printed directly on the package. Affirmative and negative symbols need not be framed by border lines, but all negative symbols with "DO NOT ..." should have borders with a slash mark across. Additional pictorial marking symbols and their application are illustrated in ASTM D 5445.



Figure 4-39. Expedited.

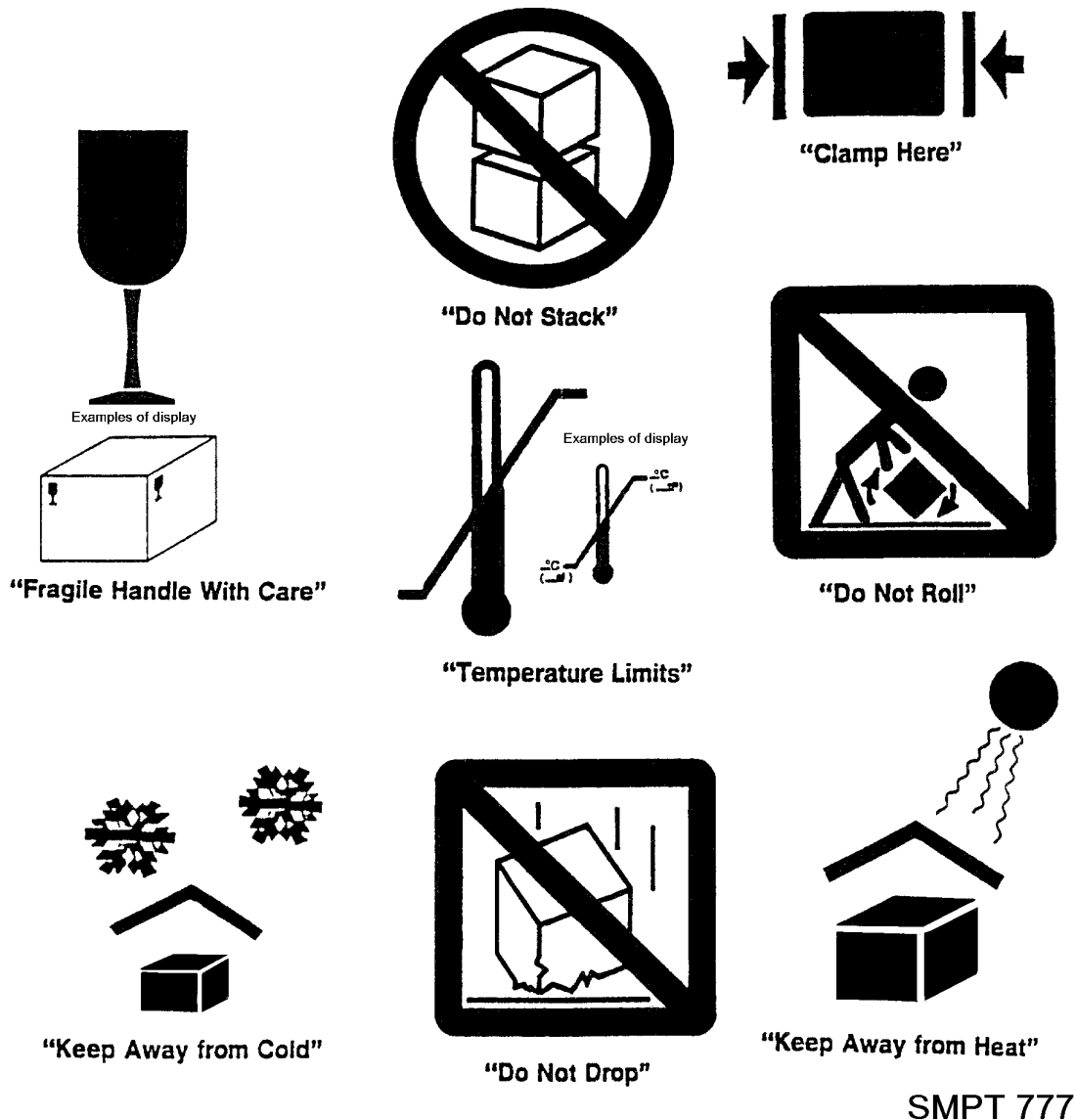


Figure 4-40. Pictorial symbols.

Marking Procedures for Boxes and Crates

The required markings for boxes and crates must be placed on the location specified and must not be obscured by cleats and strapping. For the purpose of this lesson, each box or crate must have two ends, two sides, a top, and a bottom.

Unless otherwise specified, an end and the top and bottom of containers shall always be free of any markings.

Exterior identification markings shall be applied to the left upper two-thirds of the side of the container having the largest marking surface area.

Additional identification markings are required on the upper left two-thirds of one end of containers 10 cubic feet and over.

The "one end" is defined as the end which is to the left of the identification marked side of the container.

Identification and contract data shall be stenciled or printed directly on the container or applied by use of a stencil or label. Contract data markings must be placed on the side of the container below the identification markings.

The positioning of exterior markings on boxes and crates are shown in figures 4-28 and 4-29.

Marking Procedures for Other Miscellaneous Containers

The proper marking procedures for bales, sacks, cloth-covered bundles, drums, barrels, and other miscellaneous containers are outlined in MIL-HDBK-129. Generally, all containers require the same basic markings; but due to the various shapes of these containers, they differ as to where these markings will be placed on the container. MIL-HDBK-129 outlines the proper location and special markings required on each specific container.

Standard Marking Procedures for Palletized Unit Loads

When a palletized unit load is formed, the individual containers comprising the unit load should already be marked with the appropriate identification and contract data information. Unless otherwise specified, unit loads of box-packed items should have one or more boxes turned to present a blank surface for markings. The palletized unit load should have the exterior container identification, contract data, and address markings applied as specified herein. See figure 4-41 for marking of unit loads having wood collars or frames. For palletized unit loads 10 cubic feet and over, additional identification markings should be placed on the end of the load to the left of the identification-marked side. When a fiberboard container such as a triple-wall fiberboard box is used for unitizing a load in lieu of palletization, all required markings, including the address markings, may be placed directly on the flat fiberboard surface (see figure 4-42). Unitized tires should be stacked on pallets, sidewall to sidewall, to prevent the markings on the individual tires from being seen around the circumference on the load. The gross weight for palletized/containerized unit loads should include the weight of the pallet or container base. Because palletized loads are often stacked two or three high when shipped or stored, the markings must be large enough to be read from a distance. The size of the lettering should be proportionate to the overall size of the unitized load but should be not less than three-fourths of an inch in height.

Exterior container identification and contract data markings should be placed on a marking board/panel by using a label or by direct stenciling. Palletized loads with smooth, flat surfaces may have identification markings stenciled directly on two surfaces, with markings extending from one container to another. Contract data markings should be applied to one surface.

Except for Defense Supply Center Philadelphia (DSCP) Clothing and Textiles (C&T) items, palletized loads of containers of items having different NSNs should be marked as multipacks. Palletized loads of DPCP C&T items having different NSNs should be marked as specified in the contract or order.

When a palletized load is covered with stretch-wrap film, pressure-sensitive labels containing the identification, contract data, and address markings may be placed on the outermost layer of wrap on either side of the load in addition to other markings requirements. Variations are authorized based on local operations and capabilities (e.g., a marking board/panel positioned on the pallet before the last layer of wrap is applied).

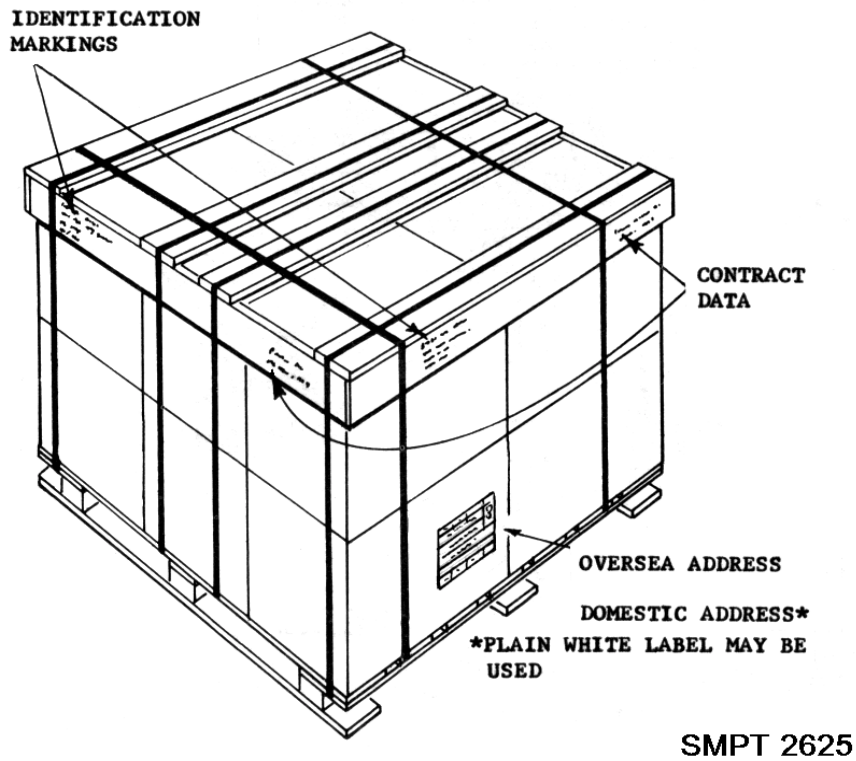


Figure 4-41. Marking of unit loads which have wood collars or frames.

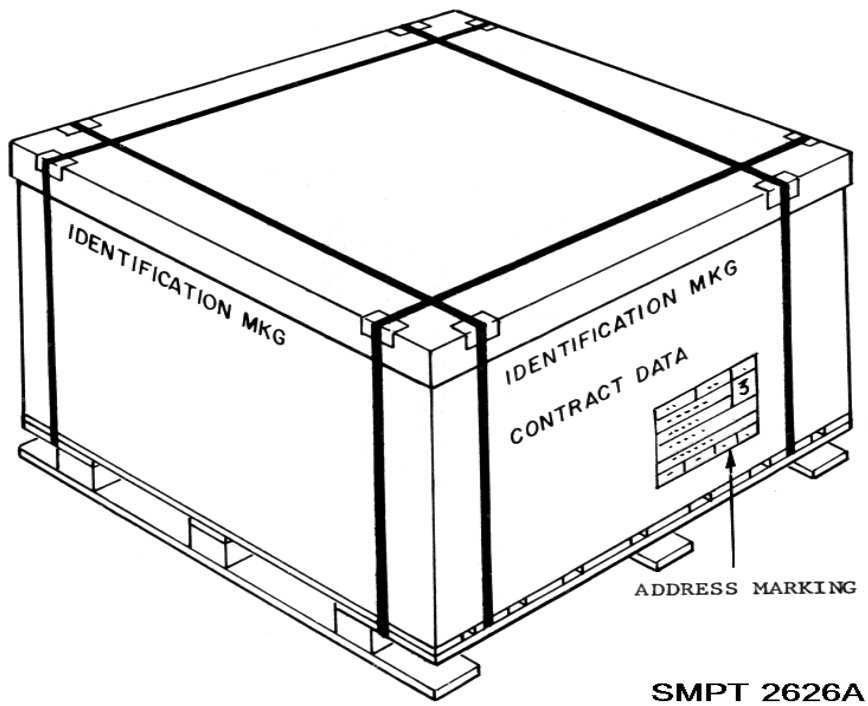


Figure 4-42. Marking of box type pallets.

Bar Code Markings

The bar coded (NSN/NATO) stock number will consist of the basic 13 data characters. Prefixes and suffixes to the stock number as well as spaces and dashes will not be bar coded. In addition, the MFR/PN will not be bar coded.

The human readable interpretation (HRI) will be an exact interpretation of the bar code data and will not contain spaces or dashes. The HRI will be located preferably below the bar code markings or optionally above the bar code markings.

On other than wood containers, bar code markings will be applied either by labels or by direct printing on the container. Unless otherwise specified by the cognizant activity, labels used for bar coding shall meet the following minimum requirements.

Preprinted labels shall have a clear, transparent laminate coating. Non-preprinted labels shall have a protective coating.

Labels shall be made of polyester or equal material.

On wood containers (intermediate or exterior shipping), bar code markings will be applied only by means of labels. The labeling area will be given a smooth coat of sand-colored paint, lacquer, or varnish prior to application. A clear/transparent overcoating must be placed over the bar code labels. In addition to the adhesive, it may be necessary at times to also use staples. Any commercial-type staple may be used as long as it is not placed within the bar code or the quiet zone.

When the unit pack and exterior shipping container are one and the same, only the exterior shipping container bar code markings need to be applied.

When bar code labels are used on exterior shipping containers, a waterproof, clear/transparent, plastic, protective overcoating such as ASTM D 5486, type III, class 2 tape, shall be applied to or inherent to the label. Bar code quality shall be in conformance with AIM BC1, Uniform Symbology Specification Code 39, after the protective coating has been applied.

There are two bar code configurations. Vertical (ladder) and horizontal (picket fence). All bar codes will be in a horizontal configuration unless otherwise specified in the contract or order.

Recommended Placement of Bar Code Markings, MIL-HDBK-129, Military Marking**Unit Packs and Intermediate Containers**

The NSN/NATO stock number will be bar coded and applied above the identification markings. When space does not permit placing all of the required markings, including bar code markings, on one surface of the package, bar code labels/markings will be placed on an adjacent or opposite side of the package.

As an alternative, the procuring activity may request that the package size be increased to accommodate bar code markings. Bar code markings placed inside a transparent container must be machine readable from the outside of the container. Similarly, bar code markings on containers which are shrink/ stretch wrapped into a load must be machine readable from the outside of the load in at least one location. In addition to the HRI section of the bar code markings, the NSN/NATO stock number, including spaces or dashes and prefixes or suffixes, when applicable, shall be marked in-the-clear as the first line of identification markings.

Exterior Shipping Container Under 10 Cubic Feet

For exterior containers, the NSN/NATO stock number and contract number will be bar coded and will be applied on the identification side of the container. The bar code symbol will be located in an area adjacent to the identification markings and will be in a horizontal, or "picket fence," configuration. The bar code will be applied at minimum distances of 2.0 inches (50.8mm) from the top and bottom edges, 1.0 inch (25.4mm) from the side edges, and a minimum distance (quiet zone) of 0.25 inch (6.35mm) from the nearest identification marking will be maintained. Bar codes may be applied in either one of the following formats, listed in order of preference, unless otherwise specified:

- X Stacked on two separate lines with the NSN/NATO stock number immediately above the contract number. When a stacked configuration is used, the bar codes shall be left-justified (left-hand (start) characters vertically aligned).
- X Horizontal (in line) with the NSN/NATO stock number preceding the contract number and with a minimum space of 0.5 inch (12.7mm) separating the two bar codes. Other data, when specified, will follow the contract number with a minimum separation of 0.5 inch (12.7mm). See figure 4-43.

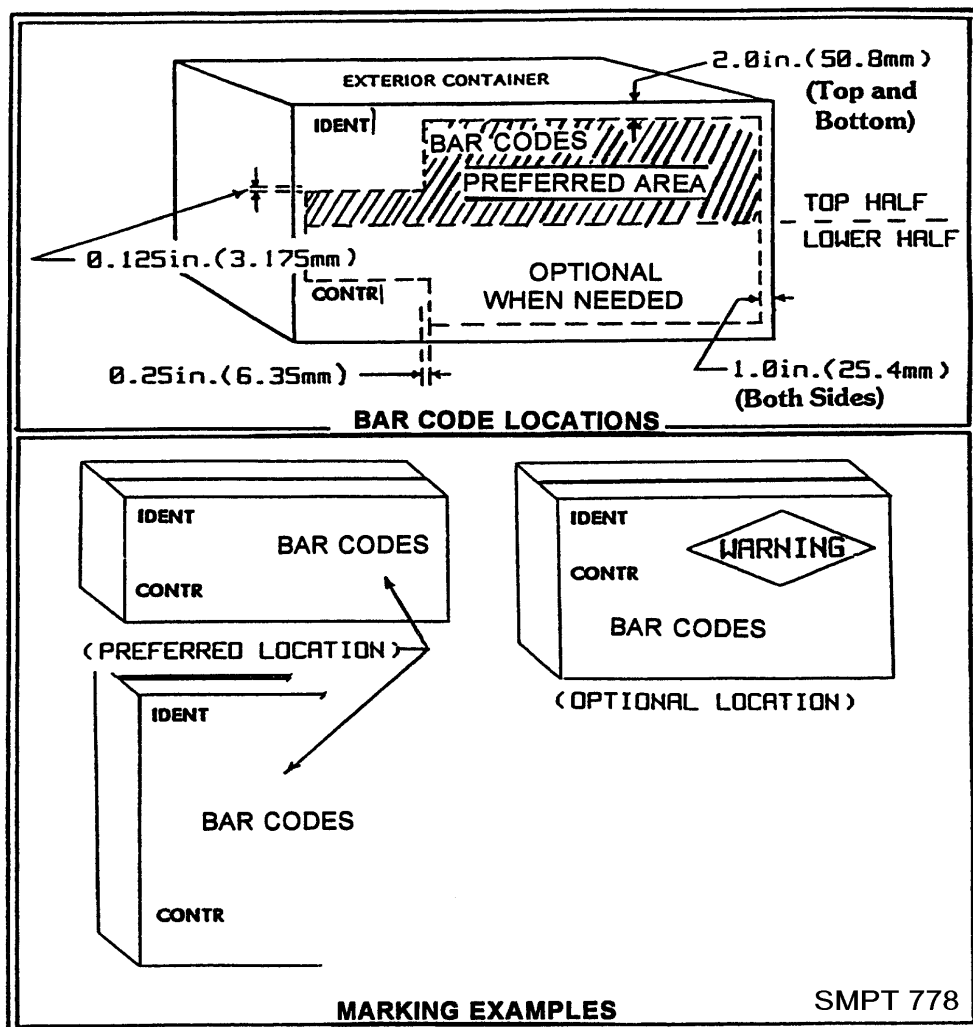


Figure 4-43. Bar Code Markings on Boxes Under 10 Cubic Feet.

Exterior Shipping Containers 10 Cubic Feet and Over

Bar code markings are required on one end and one side of the container and will be applied as shown. The positioning of the bar code markings will be as specified in figure 4-44. When a marking board is used for unsheathed crates, the bar code markings shall be applied immediately to the right of or beneath the contractor markings and shall be in line with them.

Bar coded tags

If space permits on the identification tag, the bar code label/marking may be applied to the right of the identification markings or beneath the contract data markings. If space does not permit, the bar code markings may be applied on the reverse side of the tag.

Multipacks

Item identification markings will not be bar coded on the exterior shipping container of multipack shipments. However, unit packs and intermediate containers require bar coding. The contract number will be bar coded on the exterior shipping container of the multipack if the number applies to all unit and intermediate containers in the multipack. If mixed contract numbers are contained in the multipack, then each unit or intermediate container will have the contract data bar coded, and the exterior container will not be bar coded.

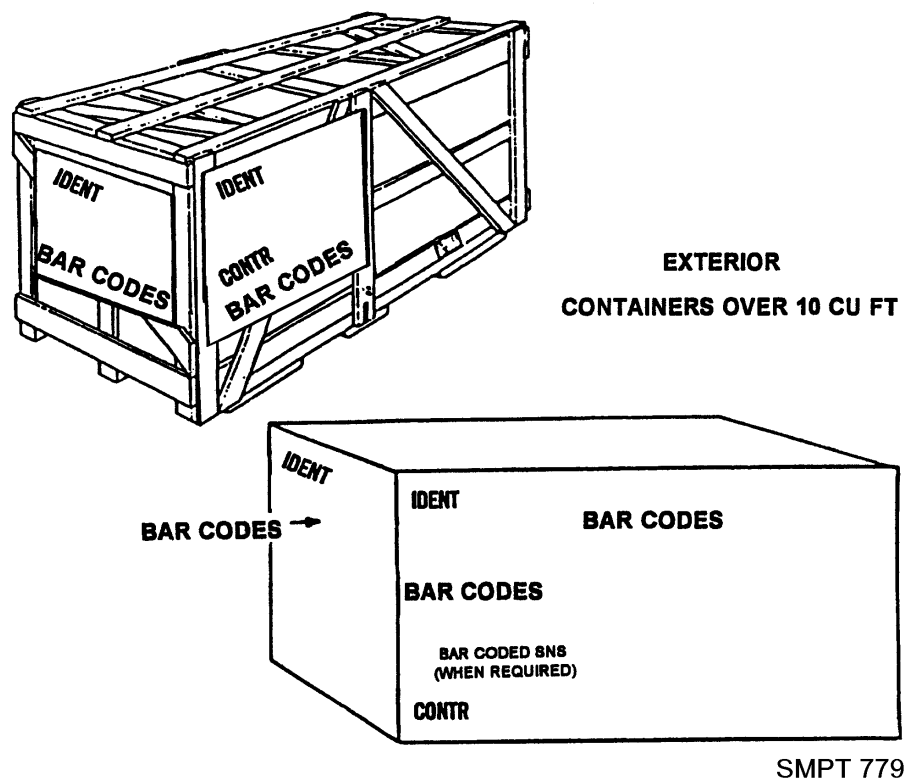


Figure 4-44. Exterior container bar code markings on boxes 10 cubic feet and over.

Checkup

- X What is the purpose of marking?
- X What documents cover marking for shipment and storage?
- X What are the required interior unit pack identification markings?
- X How many oversea address labels are required on a box over 10 cubic feet?
- X Where are the identification markings and contract data markings located on a palletized load of fiberboard boxes?
- X Where is the domestic or overseas shipment address label located on the exterior shipping container?

MARKING AND LABELING APPLICATION PRACTICAL EXERCISE

Objective

As a result of this practical exercise, the student will be able to apply the appropriate marking and labels to containers being prepared for shipment.

General Instructions

This exercise will take approximately one class period.

This exercise will be conducted in the classroom.

A critique will be conducted at the end of the exercise.

Conduct of Exercise

Situation

As a packer you are responsible for marking and labeling containers for shipment. You are going to pack items which will be sent as a multipack to a break bulk point where the individual packs will be transshipped.

Requirement No. 1. Answer the following questions.

- X What materials may be used for stencil marking?
- X List at least 4 waterproofing materials used as protective coatings.
- X What special materials are used to obliterate CARC painted markings on metal reusable containers?
- X Describe the requirements for pressure sensitive, water-resistant paper labels.
- X What are the general requirements for the condition of surfaces to be marked?
- X What materials may be used for stencil marking?
- X List weatherproofing materials that may be used as protective coatings.
- X What special materials are used to obliterate CARC painted markings on metal reusable containers?
- X What are the general requirements for the condition of surfaces to be marked?
- X How many expedited shipment labels are required on each box and where are they placed?
- X A 2-inch black ball on the lower half of the right hand end of the marked side means the box is what?
- X What should you do with old or unrequired markings?
- X On a box over 10 cubic ft., where is the address label placed?
- X Where are the identification markings placed on a 12 cu. ft. crate?
- X Under what circumstances are you required to put center of balance

markings on a container?

- X Describe the two types of shelf-life markings.
- X What markings must be placed on an exterior shipping container of unrelated items?
- X How would you protect the packing list for a military overseas shipment?
- X What labels would you put on a container of frozen medical material which will be shipped by military air?
- X List the proper exterior identification markings in the proper order for the shipment described below.

PN: 3456

NSN: 1234-56-789-1234

Method and level of pads: M41-4/97

Gross weight: 8 lbs. Gross weight should be rounded up to the nearest pound.

Quantity and Issue: 2 ea.

Critique

The instructor will hold an oral critique of the exercise when the students have finished answering the questions.

Care of Area, Training Aids & Equipment

Not applicable.

HAZARDOUS MATERIALS

GENERAL

Because of the special nature of hazardous materials and the associated dangers, the public and the government are taking greater interest in their shipment and storage. Everyday more and more items are being placed under hazardous materials regulation. As the number of regulated hazardous materials increases, the greater the chance that they will enter the inventory of items with which you are associated. It is important, therefore, that you be able to readily identify hazardous materials through their labels and special markings.

HAZARDOUS MATERIAL REGULATION

The proper classification of hazardous materials influences the packaging, hazard markings, shipping paper entries, emergency response, and any other instruction governing the material. It is, therefore, essential that the appropriate classification is made, because improper classification can be extremely dangerous.

CLASSIFICATION

Department of Transportation hazardous material class (classification) definitions. (Also used by DOD).

Class 1 (Explosive)

An "explosive" means any substance or article, including a device, which is designed to function by explosion (i.e., an extremely rapid releases of gas and heat) or which, by chemical reaction within itself, is able to function in a similar manner even if not designed to function by explosion, unless the substance or article is otherwise classed under the provision of CFR 49. Explosives in Class 1 are divided as follows:

- X Division 1.1 consists of explosives that have a mass explosion hazard. A mass explosion is one which affects almost the entire load instantaneously.
- X Division 1.2 consists of explosives that have a projection hazard, but not a mass explosion hazard.
- X Division 1.3 consists of explosives that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard.
- X Division 1.4 consists of explosive devices that present a minor explosion hazard. No device in this division may contain more than 25 g (0.9 ounce) of a detonating material.
- X Division 1.5 consists of very insensitive explosives. This division is comprised of substances which have a mass explosion hazard but are so insensitive that there is very little probability of initiation or of transition from burning to detonation under normal conditions of transport.
- X Division 1.6 consists of extremely insensitive articles which do not have a mass explosive hazard.

Class 2 (Gases)

Gases in Class 2 are divided as follows:

- X Division 2.1 (Flammable gas) "Flammable gas" means any material which is a gas at 20EC (68EF) or less and 101.3 kPa (14.7 psi) of pressure (a material which has a boiling point of 20EC (68EF) or less at 101.3 kPa (14.7 psi) which is ignitable at 101.3 kPa (14.7 psi) when in a mixture of 13 percent or less by volume with air; or has a flammable range 101.3 kPa (14.7) with air of at least 12 percent regardless of the lower limit.
- X Division 2.2 (non-flammable, non-poisonous compressed gas). A "non-flammable, non poisonous compressed gas" means any material (or mixture) which exerts in the packaging an absolute pressure of 280 kPa (41 psia) at 20EC (68EF), and does not meet the definition of Division 2.1 or 2.3.
- X Division 2.3 (Poisonous or toxic gas). "Poisonous gas" means a material which is a gas at 20EC (68EF) or less and a pressure of 101.3 kPa (14.7 psi) (a material which has a boiling point of 20EC (68EF) or less at 101.3 kPa (14.7 psi) and which is known to be so toxic to humans as to pose a hazard to health during transportation, or in the absence of adequate data on human toxicity, is presumed to be toxic to humans based on tests.

Class 3 (Flammable liquids)

A "flammable liquid" means any liquid having a flashpoint of not more than 60.5EC (141EF) with certain exceptions listed in CFR 49.

Flammable Solids

Class 4 flammable solids are as follows:

- X Division 4.1 (Flammable Solid). A "flammable solid" means any of the following three types of material:
 - B Certain wetted explosives
 - B Self reactive materials
 - B Readily combustible materials
- X Division 4.2 (Spontaneously Combustible Material). "Spontaneously combustible material" is either pyrophoric or self-heating.
 - B A pyrophoric material is a liquid or solid that, even in small quantities and without an external ignition source, can ignite after coming in contact with air.
 - B A self-heating material is a material that, when in contact with air and with an energy supply, is liable to self-heat.
- X Division 4.3 (Dangerous when wet material). "Dangerous when wet material" means a material that is spontaneously flammable or gives off flammable or toxic gases when in contact with water.

Class 5

Class 5 is made up of the following divisions:

- X Division 5.1 (Oxidizer). "Oxidizer" means a material that may, generally by yielding oxygen, cause or enhance the combustion of other materials.
- X Division 5.2, (Organic Peroxide). "Organic peroxide" means any organic compound containing oxygen (O₂) in the bivalent -O-O-structure and which may be considered a derivative of hydrogen peroxide, where one or more of the hydrogen atoms have been replaced by organic radicals, with certain exceptions.

Class 6

Class 6 is made up of the following divisions:

- X Division 6.1 (Poisonous or Toxic Material). A "poisonous material" means a material, other than a gas, which is known to be so toxic to humans as to afford a hazard to health during transportation, or which, in the absence of adequate data on human toxicity is presumed to be toxic to humans.
- X Division 6.2 (Infectious Substance). An "infectious substance" means a viable microorganism, or its toxin, which causes or may cause disease in humans or animals, and includes those agents listed in 42 CFR 72.3 of the regulations of the Department of Health and Human Services or any other agent that has the potential to cause severe, disabling or fatal disease.

Class 7 (Radioactive Material)

"Radioactive material" means any materials having a specific activity greater than 0.002 microcurie per gram (μCi/g).

Class 8 (Corrosive Material)

A "corrosive material" is a liquid or solid that causes visible destruction or irreversible alterations in human skin tissue at the site of contact, or a liquid that has a severe corrosion rate on steel or aluminum.

Miscellaneous Hazardous Materials

"Miscellaneous hazardous materials" means a material which presents a hazard during transport, but which is not included in any other hazard class. This class includes:

- X Any material which has an anesthetic, noxious or other similar property which could cause extreme annoyance or discomfort to a flight crew member so as to prevent the correct performance of assigned duties.
- X Any material that is not included in any other hazard class, but is subject to the requirements CFR 49 because it meets the definition of an elevated temperature material, a hazardous substance or a hazardous waste.

Other Regulated Materials (ORM)

"ORM-D material" means a material such as a consumer commodity, which, although otherwise subject to the regulations presents a limited hazard during transportation due to its form, quantity and packaging.

Hazardous Material Identification Numbers

Most hazardous materials have been given identification numbers. These numbers are preceded by the letters UN for proper shipping names considered appropriate for international transportation as well as domestic transportation and NA associated with proper shipping names not recognized for international transportation, except to and from Canada. Identification numbers may be found on shipping papers, individual packages, placards, and/or panels. These numbers are also a key to a guide published by the Department of Transportation (DOT P5800.5, Emergency Response Guidebook) that outlines initial action to be taken by emergency response personnel handling incidents involving hazardous material. Each guide lists potential hazards and emergency actions that should be taken.

Labels

Since each class of hazardous materials has its own characteristic, it is important to be able to identify the contents of the individual packages. This is accomplished by special markings and labels. Let us look at the labels first.

- X All hazardous materials class labels are diamond shaped. Each side of the diamond is at least 4 inches long.
- X Each label is distinctive color and contains both a representative symbol plus the class designation.
- X Labels are generally required to be placed on the surface of the package bearing the proper shipping name.
- X When more than one hazardous material is packaged in a container, more than one label or kind of labels may be needed.
- X In some cases more than one hazard class warning label(s) is required. The first label shown for an entry indicates the primary hazard of the material and additional labels indicate subsidiary or secondary hazards.
- X Subsidiary/secondary labels will not bear a hazard class identification number. This is to help emergency responders identify the primary hazard to which they must respond. Rationale: It is essential that readers understand there is a difference in primary and subsidiary labels.
- X No label will be used on a package if the material is not hazardous, and no label that looks like a hazardous label should be used.

Markings

Containers of hazardous materials must be marked per MIL-STD-129, Standard Practice for Military Marking. That is, the container must have the normal markings found on all the material in the Defense Transportation System, such as the identification, contract, and shipping markings.

In addition, the container must have the proper shipping name and the identification number assigned to the material by CFR 49 applied below the identification markings. For hazardous materials classified as an ORM, the appropriate designation must be placed after the proper shipping name.

Non-bulk packages having inner packagings containing liquid hazardous material must be packed with the closure up and legibly marked with "arrows" pointing in the correct upright direction of the package.

Radioactive material packs will be marked either Type A or Type B indicating the type of package. When in excess of 110 pounds (50 kilograms), must have its gross weight marked on the outside of the package.

With a few exceptions, packages containing hazardous materials must be marked with the "proper shipping name" as determined from the applicable modal regulations. The proper shipping name is used to provide universal understanding of the contents of the package, since the proper shipping name may be different from the item nomenclature. The four digit identifications number is also applied for this reason.

Markings must be clear and durable, and on a contrasting background.

Most hazardous material packages must be marked with the name and address of the consignee or consignor.

Only authorized abbreviations, such as "w" for with, "wo" for without, and ORM for Other Regulated Materials may be used.

Performance Oriented Packaging (POP) markings shall be located opposite the identification marked side of the package (see figure 4-45).

Compatibility

Compatibility of hazardous materials is a key factor that needs to be considered during every phase of packaging, shipping, storage and transportation. Packages containing hazardous material which react dangerously with another are incompatible and must be segregated and/or in some cases separated during shipment and storage.

Compatibility and other safety considerations are also crucial during loading and movement of hazardous materials. Compatibility must be determined through the proper use of the Segregation and Separation charts in the CFR 49. Additionally, for movement on military aircraft, the pilot must be notified when and where hazardous materials are positioned on the aircraft in case of an incident.

Placards

The final means of identifying shipments of hazardous materials is placarding.

Placards are similar to the labels, but they are placed on the outside of the vehicle.

They are also diamond-shaped, but 10-3/4 inches on each side.

They contain a symbol and description of the contents of the vehicle (not necessarily the class). Placards for tank cars will have the identification number of the material in place of the descriptive wording.

The shipper is responsible for furnishing the required placards to the carrier.

The placards are needed on all ends and sides of the transporting vehicle and some freight containers and portable tanks.

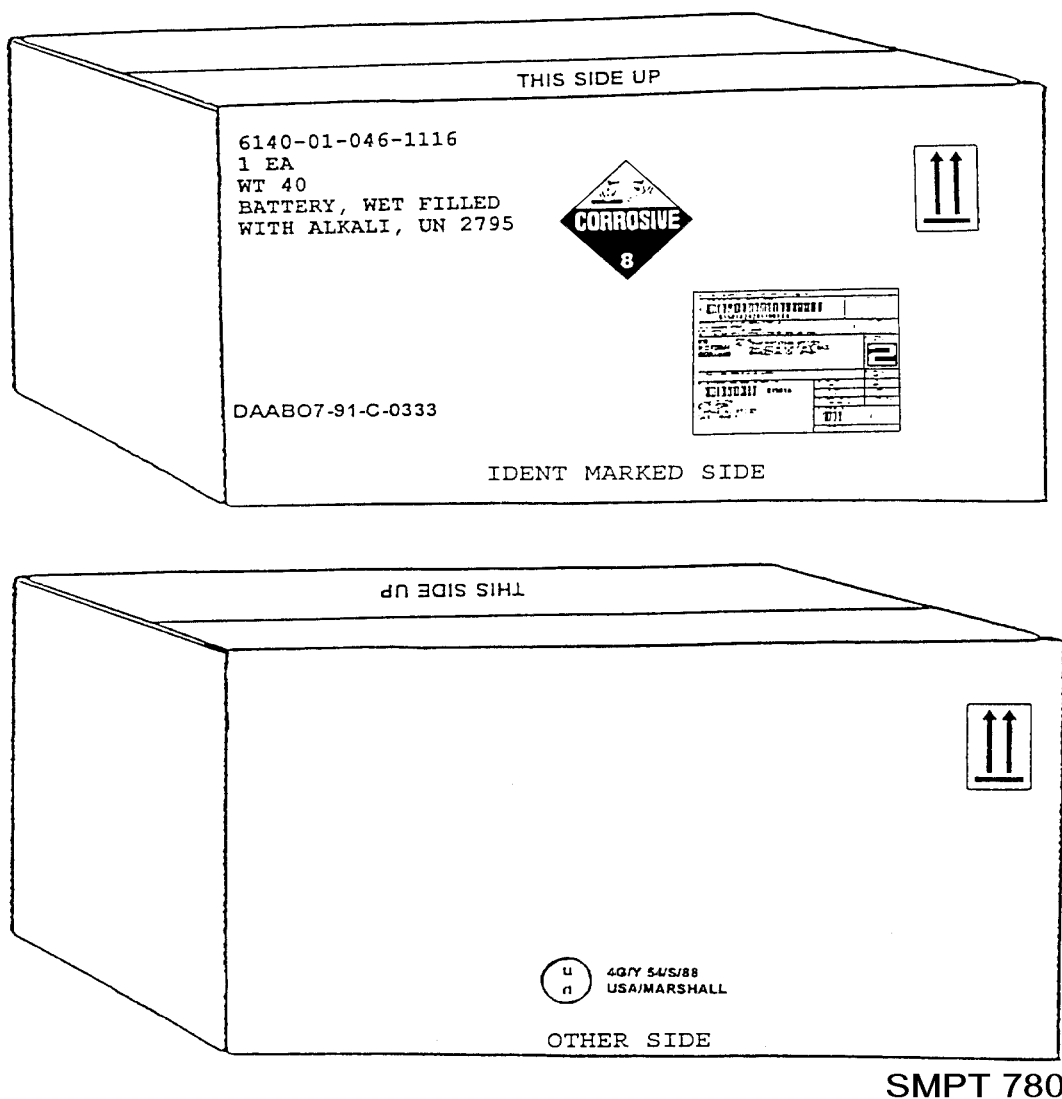


Figure 4-45. An example of exterior container HAZMAT marking and labeling requirements.

General Packaging Requirements

Containers are to be so designed and constructed that there will be no significant release of the hazardous material into the environment.

There must be no mixture of gases that could increase heat or pressure that would reduce the effectiveness of the package.

Containers labeled with the "Empty" label must be entirely free of any hazardous material.

Many containers will be marked with the Department of Transportation (DOT) specification number for the container, e.g., DOT-1A, DOT23G40, etc.

Containers should be made of materials that do not react with the hazardous material inside.

Containers with screw cap closures should be sealed with a secondary closure to prevent loosening by vibration.

Containers being reused must have the old markings removed or obliterated.

Containers should be marked with the proper shipping name.

For our purpose, it is sufficient to understand that DOD shipments of hazardous materials may be made in either DOT, UN or federal/military specification containers if they have successfully passed the performance oriented packaging testing requirements with the material being shipped.

We should always concentrate our efforts to insure that containers of hazardous materials are sound, properly sealed and not leaking. Any indication that the container is not doing its job should be reported and the discrepancy corrected prior to shipment or storage.

General Handling Requirements

Explosives

To be eligible for transportation, explosives, explosive devices, and munitions, including commercial and foreign, must be tested, approved, and assigned a DOD classification according to TB 700-2/NAVORDINST 8023.3/DLAR 8220.1, DOD Explosive Hazard Classification Procedures. The services and DLA must comply with AFI 91-201/TM 9-1300-206/NAVSEA OP 5 for safety precautions, standards, and rules when operating in an environment with explosives.

Flammable Liquids

These materials should be stored in cool, well-ventilated areas. They must be stored away from sources of heat, flames, sparks, combustible materials or oxidizing agents. Containers must be kept tightly closed. In the event of leakage or spillage, rubber gloves, goggles, aprons and respirators must be used.

Flammable Solids and Oxidizing Materials

These materials must be stored in cool, well-ventilated areas away from moisture. They must not be stored near corrosives. All containers must be tightly and securely closed.

Corrosive Materials

Corrosives must be stored in a cool ventilated area away from sources of heat and oxidizing agents. Gas masks, respirators, rubber gloves, goggles, and other protective clothing should be available for use in the event of leakage.

Compressed Gases

These materials, in general, must be stored in a cool, well-ventilated area away from fire hazards, sources of heat, ignition, or sparks. Do not drop jar, or slide containers.

Poisonous Materials

Keep cool and away from direct sunlight and high temperatures. Store away from sources of ignition oxidizing materials, and acids. Avoid direct contact with the materials. Wear a gas mask or breathing apparatus as instructed by safety personnel during exposure.

Radioactive Materials

Handling requirements for these materials can be complex and involved. At least, it should be emphasized that personnel handling these materials take precautions to minimize exposure. Containers should not be opened except for good reason under supervision of radiological protection personnel.

Handling Markings

Always be sure to comply with all handling markings, e.g., THIS SIDE UP, FRAGILE, etc.

Training

No person will accept the responsibility of handling HAZMAT, including but not limited to packing, marking, labeling, etc., without first meeting the training requirements found in DOD 4500.9-R, Defense Transportation Regulation, Part II, Cargo Movement, Chapter 204, Hazardous Material.

Checkup

- X Hazard class labels signify what when placed on a package?
- X What markings are placed on the exterior of a package of hazardous material to identify the material?
- X May oxidizing materials be packed in the same outside container with corrosive liquids?

SMALL PARCEL SHIPMENT

DEFINITION

The primary factors to keep in mind when defining small parcels are that weight, cube, and quantity play the big roles in establishing the requirements for shipment. A parcel may be described as a small wrapped package, box, bundle, or container.

Parcel Shipment Policy

The DOD supports the use of parcel carriers. Contractors are authorized to employ carriers for movement of small packages within the scope of guidance provided by DLA. Just as in the selection freight carriers, they must weigh all factors and choose mode and carrier according to dominant consideration. Their decision must accommodate these rules:

- X In general, choice of mode and carrier depends upon a number of variables; weight, size, cost, urgency destination, and carrier service. This sequence does not necessarily imply order of importance. Any one factor or combination can determine choice.
- X Consolidate parcels to common destinations if priority, delivery schedule, contract provisions, or other factors permit. The mechanics, of course, would consist of holding parcels for a reasonable length of time and combining them on a pallet or in a container for freight movement. Conversely, do not break up legitimate freight shipments to ship through small package channels.
- X Each package must contain or have attached four copies of DD Form 250.
- X Under no circumstances should items or materials be tendered to USPS or UPS that could be dangerous to life or health of their employees, the general public, or compromise the safety and security of mail/parcels. USPS Publication 52, entitled "Acceptance of Hazardous or Perishable Articles," identifies nonmailable materials and establishes requirements which must be met prior to placing other authorized hazardous items in the mail. *A publication by UPS, entitled "Guide for Handling Hazardous Material," contains packaging and labeling requirements as well as a long list of prohibited chemical products not necessarily reflected in 49 CFR.* UPS has designated as hazardous some items not so identified by DOT.

Parcel Carriers

There are several services which provide for small parcel shipment.

Parcel Post

Defined narrowly, parcel post should be viewed as any material or items tendered to USPS for delivery through USPS channels. There are many rules surrounding use of parcel post. The Congress of the United States sets forth conditions under which postal services are available to the public.

The availability of postal services

The Code of Federal Regulations, Title 39, sets forth service available, prescribes rates, fees, and conditions under which postal services are available. The Postal Service Manual contains regulations and procedures for both public and internal use. Chapter 1 covers procedures for use by the postal department, public, and authorized departments and agencies of the Federal Government.

Postal Services for Military Use

The postal services for military use are outlined in DOD Instruction 4525.8, Official Mail. The military post offices are designated as APO's and FPO's for OCONUS and by military activity for CONUS. Both follow the regulations and procedures set forth in the Postal Service Manual. Chapter 1 of the Postal Service Manual covers the parcel post procedure.

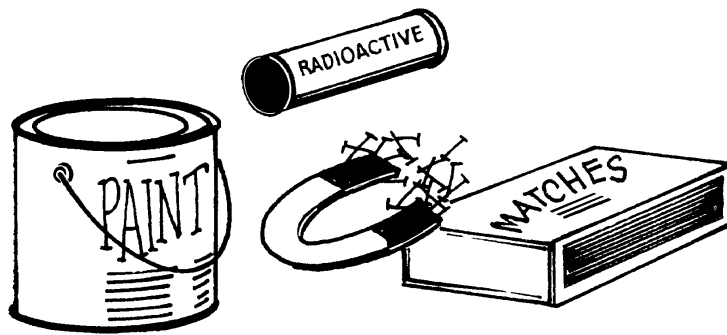
Shipment of Military Items

The shipment of military items by parcel post requires the same type of blocking, bracing, container selection, closure, and marking as previously covered in this document. Shipment of material by parcel post is desirable whenever shipments meet the requirements of the Postal Service. Material will be cleaned, dried, and preserved (as required), neutral or greaseproof wrap applied, and cushioning, blocking and/or bracing furnished as needed. Additionally, parcels addressed to overseas military post offices must be packed in boxes or containers constructed from metal, wood, plastic, or class weather-resistant, class waterproof, or water-vapor resistant fiberboard. Parcels containing mailable (nontoxic and nonflammable) gases, liquids, oils, paint, and substances which easily liquefy, must have sufficient absorbent cushioning material within the containers to absorb the contents in case of breakage.

Restricted and Nonmailable

The following items as shown in figure 4-46 are restricted and nonmailable to, from, or between overseas military post offices:

- X Matches of all kinds, lighter fluid, or lighters containing fluid.
- X Air shipments of magnetic material capable of producing sufficient magnetic fields to cause appreciable deviation to compass sensing device of an aircraft at fifteen feet or more (does not apply to surface shipments).
- X Any package of radioactive matter which contains in excess of the quantities listed in the Code of Federal Regulations, Title 49 and United States Postal Services Publication No. 6., Explosives or ammunition.



SMPT 2597A

Figure 4-46. Restricted and nonmailable items.

Mailings Within the United States

Priority or first-class mail shall be used only for high-priority logistic shipments, such as 999 shipments, and Weapon System Pouches (WSP's). Priority or first-class mail shall also be used for Uniform Material Movement and Issue Priority System (UMMIPS) priority designators 01-08 shipments that are consigned to a location more than 300 miles from the shipper. UMMIPS priority designator 01-08 shipments consigned to location 300 miles or less shall be sent as third or fourth-class mail. All UMMIPS priority designators 09-15 shipments shall be sent third or fourth-class mail or held for consolidation as freight, whichever is less costly.

Mailing Overseas

Mailings to, from, and between overseas are via the MPS. Priority or first-class mail shall be used only for high-priority logistics shipments, such as, 999, WSPS and UMMIPS priority designators 01-08 shipments. All UMMIPS priority designators 09-15 shipments shall be sent by third or fourth-class mail or held for consolidation as freight, whichever is less costly.

Addressing and Marking

MIL-STD-129, Standard Practice for Military Marking, governs addressing and marking. Except for precautionary labels, packing list, or other markings required by regulation or statute, no other markings need appear on an outer wrap or container provided it is a supplemental container used for shipping purposes only and the enclosed container has the required identification markings. If a USPS mail pouch is used as the outer container for mailing of more than one package as a direct pouch to the addressee, each package in the pouch must have a parcel post label attached. Parcel post shipments to Army Post Office/Air Post Office (APO)/Fleet Post Office (FPO). APO/FPO parcel post shipment address shall be composed as follows. The DD Form 1387 shall be used as a parcel post address label and shall be completed as follows:

- X TCN: Enter the 17-character (alphanumeric) TCN in both forms (bar coded and in-the-clear).
- X Postage data: Use one of the following:
 - B For metered mail, leave blank and attach the stick-on metered postage values to or near this block.
 - B For permit imprint mail, enter the appropriate service/agency mail authorization.

Example: First Class Mail
Postage and Fees Paid
Defense Logistics Agency
Permit No. G-53

- B For standard penalty indicia mail, enter the appropriate service/agency name or abbreviation and its sampling number.

Example: Postage and Fees Paid
Department of the Navy
DOD-316

- X From: Enter the in-the-clear address of the shipping activity, including the zip code. The phrase "OFFICIAL BUSINESS, PENALTY FOR PRIVATE USE \$300" must be printed on the bottom line of this block.
- X Type service: Enter First Class- Priority Mail, Express Mail, Military Ordinary Mail, etc., as applicable.
- X Ship to/POE: For CONUS mail, enter the complete address of the consignee, including the nine-digit zip code. For mail to overseas locations, enter postal concentration at DTS port or MILSTAMP Air/Water Port identifier (APO/FPO).
- X Transportation priority: Enter appropriate transportation priority.
- X POD: Leave blank.
- X Project: Enter project code, if applicable.
- X Ultimate consignee or Mark for: Enter DODAAC of consignee (bar coded and in-the-clear). For CONUS, no other data; for overseas shipments, add detailed address.
- X WT. (this piece): Enter actual weight.
- X RDD: Enter, if applicable.
- X CUBE (this piece): Enter cube.
- X Charges: Leave blank.
- X Date shipped: Enter four-digit julian date (e.g., 8180) or the in-the-clear date (e.g., 29 Jun 88).
- X FMS case number: Enter, if applicable.
- X Piece number: Enter bar coded and in-the-clear.
- X Total pieces: Enter number of pieces in the shipment unit.

Hazardous Materials

It is absolutely imperative that shipments do not violate the Postal Service Manual Part 124. This part defines material and substances which may not be transmitted through the USPS.

Weight and size limits

Packages are limited to not more than 70 pounds and 108 inches in length and girth combined. The minimum weight for a package to qualify for parcel post is 16 ounces. Two or more packages may be mailed as a single parcel, if they are about the same size or shape or if they are parts of one article. They must be securely wrapped or fastened together and must not, together, exceed the weight or size limit. To compute the size of a parcel as shown in figure 4-47. Measure the longest side to get the length. Measure distance around the parcel at its thickest part to get the girth. Add the length and the girth together.

United Parcel Service

UPS is an acceptable carrier which offers parcel delivery service. For some weight categories, UPS rates may be lower than USPS. In addition, UPS provides routine tracing capability and proof of delivery. The shipper may use UPS if the following conditions have been satisfied:

- X The package meets all shipping criteria of the carrier-including weight and size limitations as shown in table 4-1
- X The company is willing to absorb the UPS service charge since the DOD will not reimburse that expense.

Less Truckload (LTL) Shipments

This mode is available for surface movement when USPS or UPS cannot handle the shipment configuration. Due to its high minimum rate, however, LTL, as a carrier of small packages, should not be used unless absolutely necessary.

Federal Express Corporation

Federal Express is an acceptable carrier which offers small parcel delivery service. For size and weight limitations, see table 4-1.

Commercial Air

Choice of commercial air in connection with small parcels is governed by a number of factors.

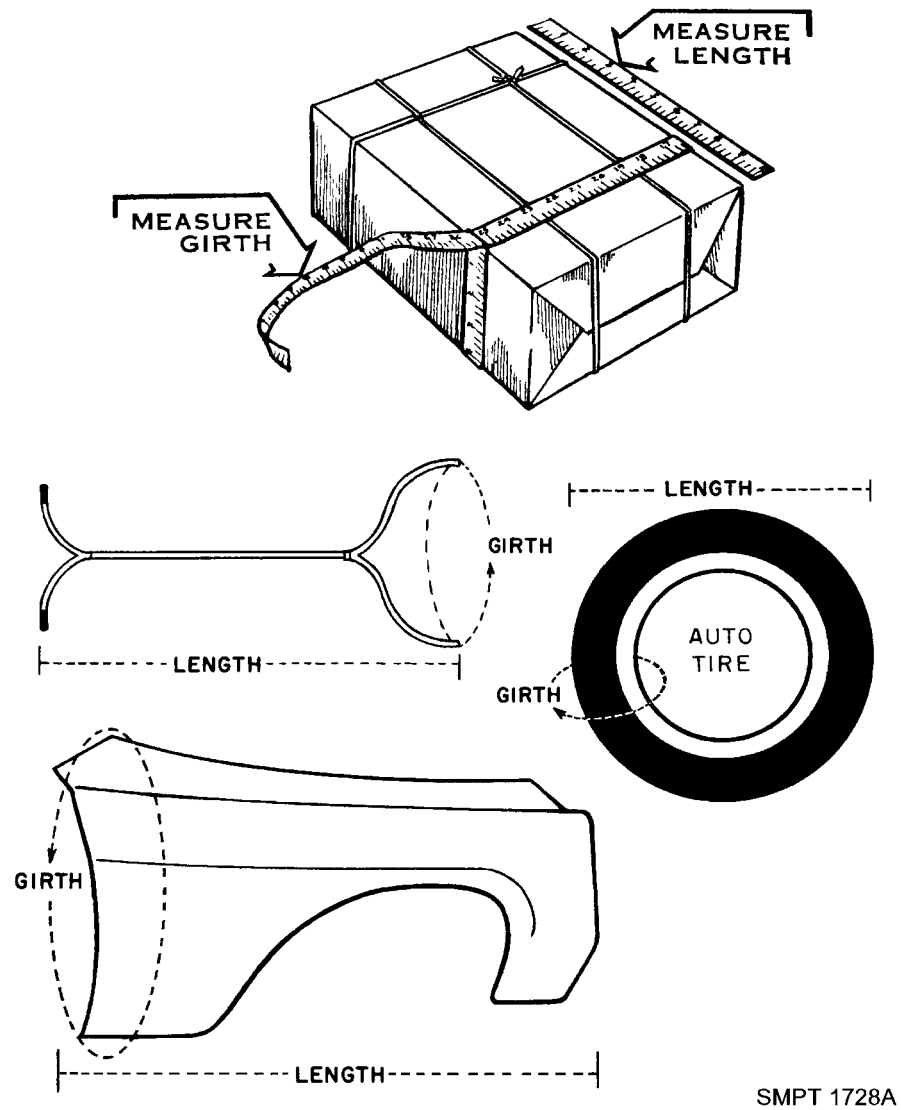


Figure 4-47. Post office measurement requirements.

Justification

Air shipments must be fully justified. TP 1 or 2 in the contract or specific instructions from the PCO or ACO is sufficient provided that surface transportation will not meet the time standard.

Distance

At no time should you use commercial air if the delivery point lies within 300 miles of the origin point. As in routing generally, selection of air carriers depends upon such factors as service, cost, weight per day. Scheduled airlines have larger size and weight criteria. Do not attempt to route hazardous, classified, or sensitive material without contacting the Transportation Office for a routing. This is important for applicability of DOT requirements.

Table 4-1. Parcel Carriers size and weight limitations

Carrier	Weight (16 ounces or more but not exceeding)	Size (Length and Girth may not exceed)
U.S. Postal Service	70 lbs*	108 in*
United Parcel Service	150 lbs.	130 in.
Federal Express Corporation	150 lbs.	165 in. (length may not exceed 119 in.)

* Maximum weight and size limits between First Class Post Offices are 40 lbs and 84 in.

Note: Shipments by air are limited to \$25,000 value in merchandise.